



INTERNAL USE ONLY

Doosan Machine Tools



NC Boring mill

DBC series



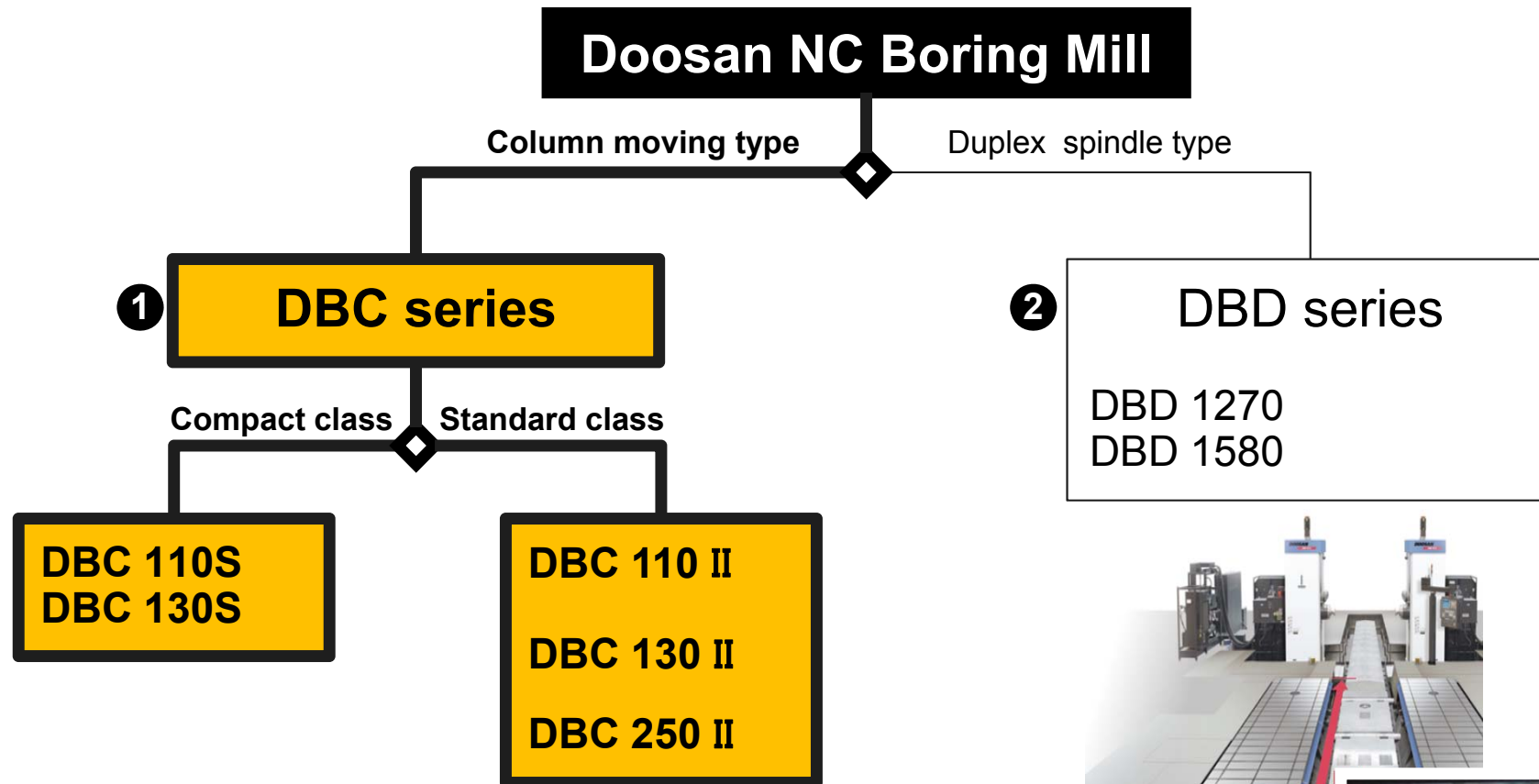
February 2014
Doosan Infracore
Machine Tools BG

B-3. NC Boring Mill

		Column moving	Duplex type column moving
		DBC series	DBD series
			
Spindle or Quill dia. (mm)	110	DBC 110S DBC 110 II	
	130	DBC 130 II	
	250	DBC 250 II	
Effective Table width. (mm)	1250		DBD 1270
	1500		DBD 1580

NC Boring Mill

Concept...



1 DBC series



Spindle or Quill dia. (mm)	Tool taper	X travel (mm)	Column moving	
			Standard	Plane table
110	#50	2000	DBC 110S	
		2500	DBC 110 II	
130	#50	2000	DBC 130S	
		3000	DBC 130 II	DBC 130P II
		4000	DBC 130L II	
250	#50	3000	DBC 250 II	
		4000	DBC 250L II	



1 DBC series

Doosan Horizontal NC Boring mills

Complete full line up from part machining to mold & die of highly productive purpose.

Sales point

•Complete Face lift from VOC of customer and Service department

–DBC110II/ DBC130(L) II/DBC130PII/DBC250(L) II

•Wide selections are available

–Compact size to Large machine / Heavy cutting to high speed machining

Sales record : about 860 units for global ('03~'13.5)



DBC110S



DBC130LII



DBC250II

Description			Unit	DBC 110S	DBC 110II	DBC 130 II	DBC 130L II	DBC 130P II	DBC 250 II	DBC 250L II
Travels	Travel distance	X-axis	mm (inch)	2000 (78.7)	2500 (98.4)	3000 (118.1)	4000 (157.5)	3000 (118.1)		4000 (157.5)
		Y-axis	mm (inch)	1500 (59)	2000 (78.7)		2500 (98.4)	2000 (78.7)		2500 (98.4)
		Z-axis	mm (inch)	1200 (47.2)	1500 (59)	1600 (63)	2000 (78.7)	1600 (63)		2000 (78.7)
		W-axis	mm (inch)	500 (19.6)	550 (21.7)	700 (27.6)				500 (19.7)
	Distance from spindle nose to table top		mm (inch)	0~1500 (0~59)	0~2000 (0~78.7)		0~2500 (0~98.4)	100~2100 (3.9~82.7)	0~2000 (0~78.7)	0~2500 (0~98.4)
	Distance from spindle nose to table center		mm (inch)	550~1750 (21.7~68.9)	550~2050 (22.7~80.7)	700~2300 (27.6~90.5)	700~2700 (27.6~106.3)	700~2300 (27.6~90.5)	770~2370 (30.3~93.3)	770~2770 (30.3~109.1)
Table size		mm (inch)	1400 x 1600 (55.1x63)	1400 x 1800 (55.1 x 70.9)	1600 x 1800 {1800 x 2000, 2000 x 2200} (55.1 x 70.9 {70.9x 78.7, 78.7 x 86.6})		1600 x 3000 (63 x 118.1)	1600 x 1800 {1800 x 2000, 2000x 2200} (55.1x70.9 {70.9x 78.7, 78.7 x 86.6})		
Spindle	Max. spindle speed		r/min	3000	4000	2500			6000	
	Boring spindle diameter		mm (inch)	110 (4.3)		130 (5.1)			-	
	Quill diameter		mm (inch)	-						250 (9.8)

1. DBC LINE-UP

2. INTRODUCTION OF DBC SERIES BY MODEL

- DBC 110S / DBC 110 II
- DBC 130 II / DBC 130P II / DBC 130L II
- DBC 250 II / DBC 250L II

3. OVERVIEW OF NEW MODEL

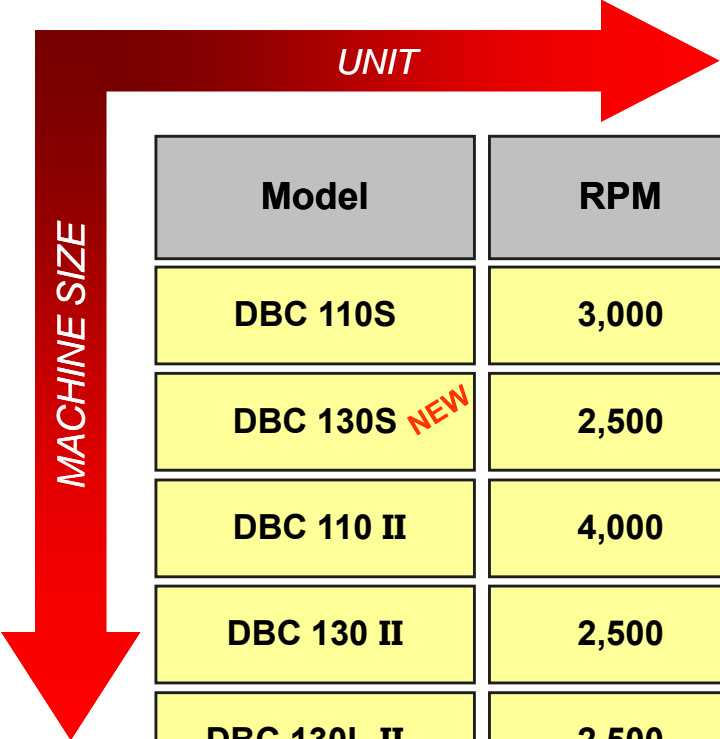
- DBC 130S (Draft)
- DBC 110 II
- DBC 130 (P,L) II

4. DBC Sales guide

- PRIMARY MARKET OF HBM

DBC LINE-UP

■ DOOSAN DBC Line-up



Model	RPM	Spindle Dia.(mm)	Structure	Application & Features
DBC 110S	3,000	BORING (Ø110)	Column Moving	Compact type Model
DBC 130S <small>NEW</small>	2,500	BORING (Ø130)		
DBC 110 II	4,000	BORING (Ø110)		General & Conventional type Model
DBC 130 II	2,500	BORING (Ø130)		
DBC 130L II	2,500	BORING (Ø130)		Large sized work-piece Model
DBC 250 II	6,000	QUILL (Ø250)		Precision type Model
DBC 250L II	6,000	QUILL (Ø250)		Large Sized Precision type Model
DBC 130P II	2,500	BORING (Ø130)		Heavy load work piece Model

DBC DESIGNATION

New Line-up & Naming of DBC Series

DBC 130 L II

• Revision (Facelift)

• Suffix Letter
 (None) : Standard
 L : Extended stroke
 P : Plain table
 S : Compact (Small) version

• Spindle diameter (mm)
 110, 130
 Quill diameter (mm)
 250

• Machine Structure
 C : Column moving
 F : Floor type
 D : Duplex column

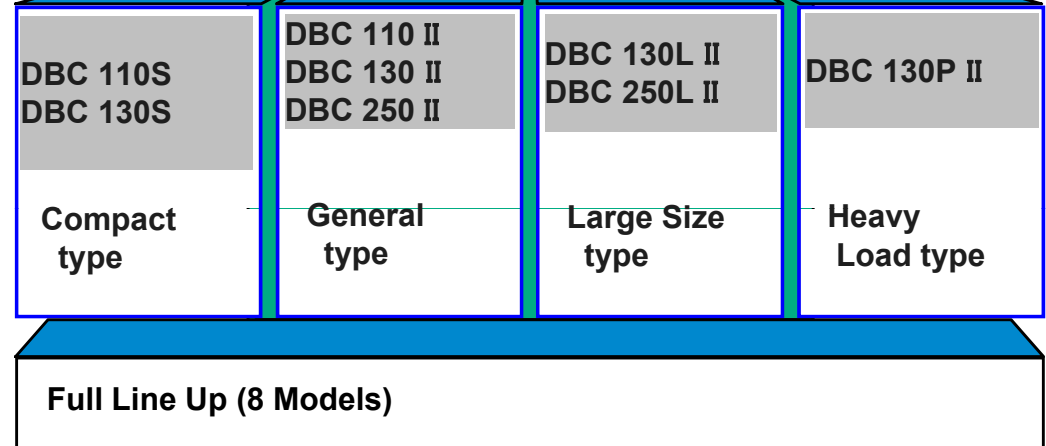
• Doosan NC Boring



DBC 130(Heavy Duty)

DBC 250(High Speed)

DBC Series



※ MACHINE SPECIFICATIONS

Description			Unit	DBC 110S	DBC 110 II	DBC 130 II	DBC 130P II	DBC 130L II	DBC 250 II	DBC 250L II
STROKE	X-axis		mm	2000	2500	3000	3000	4000	3000	4000
	Y-axis		mm	1500	2000	2000	2000	2500	2000	2500
	Z-axis		mm	1200	1500	1600	1600	2000	1600	2000
	W-axis		mm	500	550	700	700	700	500	500
TABLE	Table size (Width x Length)		mm	1400×1600	1400×1800	1600×1800	1600×3000	1600×1800	1600×1800	1600×1800
	Load capacity		kg	7000	10000	15000	20000	15000 (Opt.20000)	15000	15000
SPINDLE	Boring spindle/ Quill diameter		mm	Φ110	Φ110	Φ130	Φ130	Φ130	Φ250	Φ250
	Max. spindle speed		r/min	10 ~ 3000	10 ~ 4000	10 ~ 2500	10 ~ 2500	10 ~ 2500	10 ~ 6000	10 ~ 6000
	Max. torque		N.m	1100	2835	3392(Opt.3684)	3392(Opt.3684)	3392(Opt.3684)	598	598
	Spindle drive power (30 min. / cont.)		kW	26/22	26/22	26/22(Opt.45/37)	26/22(Opt.45/37)	26/22(Opt.45/37)	30/22	30/22
AXES SYSTEM	Rapid traverse	X/ Y/ Z/ W-axis	m/min	12/ 12/ 12/ 6	12/ 12/ 12/ 6	10/ 10/ 10/ 6	7/ 8/ 10/ 6	10/ 8/ 10/ 6 7/ 8/ 10/ 6 (Opt.)	10/ 10/ 10/ 10	10/ 8/ 10/ 10 7/ 8/ 10/ 10 (Opt.)
		B-axis	r/min	2	2	1	-	1 (Opt.0.75)	1	0.75
	Max.Cutting feedrate	X/ Y/ Z-axis	mm/min	6000	6000	4000	4000	4000	4000	4000
MAIN DIMENSION	Length x Width		mm	5300×5900	6000×8000	7650×9050	8060×9400	8060×10000	7650×9050	8060×10000
	Height		mm	4050	4900	5000	5000	5400	5000	5400
	Machine weight		kg	24000	36000	43000	47000	48000	43000	48000
ATC (Option)	Tool shank		-	MAS 403 BT50						
	Pull stud		-	MAS 403 P50T-1 (45 °)						
	Tool storage capacity		ea	40 or 60 or 90						
	Max. tool diameter	Continous	mm	130						
		Adjacent pots empty	mm	250						
	Max. tool length		mm	600						
	Max. tool weight		kg	25						
	Tool select type		-	Fixed address						

Note ; Specifications are subject to change without prior notice.

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- DBC 130 II / DBC 130P II / DBC 130L II
- DBC 250 II / DBC 250L II

3. OVERVIEW OF NEW MODEL

- DBC 130S (Draft)
- DBC 110 II
- DBC 130 (P,L) II

4. DBC Sales guide

- PRIMARY MARKET OF HBM

2. INTRODUCTION OF DBC SERIES_DBC 110S

▣ INTRODUCTION OF DBC 110S

Compact class

- The most cost reduction benefit will be provided
- Offering middle size workpiece solution for various machining

Stroke X/Y/Z

2,000 / 1,500 / 1,200 mm

Load Capacity (mm) X/Y/Z

7,000 kg

Spindle

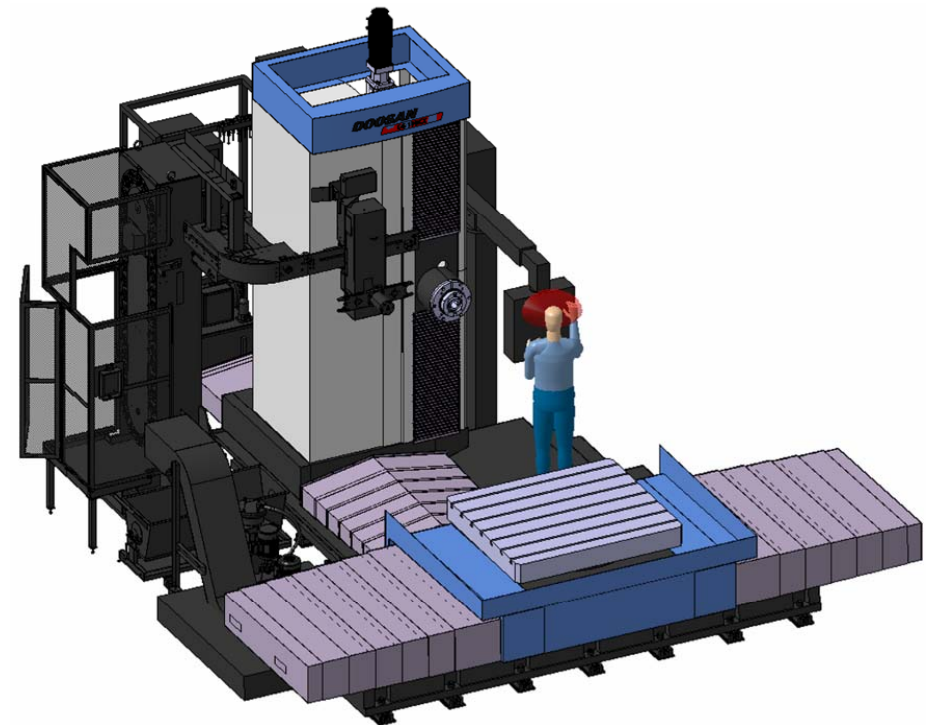
High speed boring spindle



- Spindle motor : 26/22 kW
- Spindle speed : 3,000 r/min
- Torque : 1,100 N·m

Machine Dimension

Length X Width X Height : 5,300 X 5,900 X 4,050 mm



2. INTRODUCTION OF DBC SERIES_DBC 110 II

New model

▣ INTRODUCTION OF DBC 110 II

Compact Type Model

- Designed by compact size and minimized space for high speed heavy cutting
- Approaching to the table center through W-axis stroke
- For various machining performance, high speed spindle and heavy work load capacity are provided

Stroke X/ Y/ Z

2,500 / 2,000 / 1,500 mm

Load Capacity

10,000 kg

Spindle

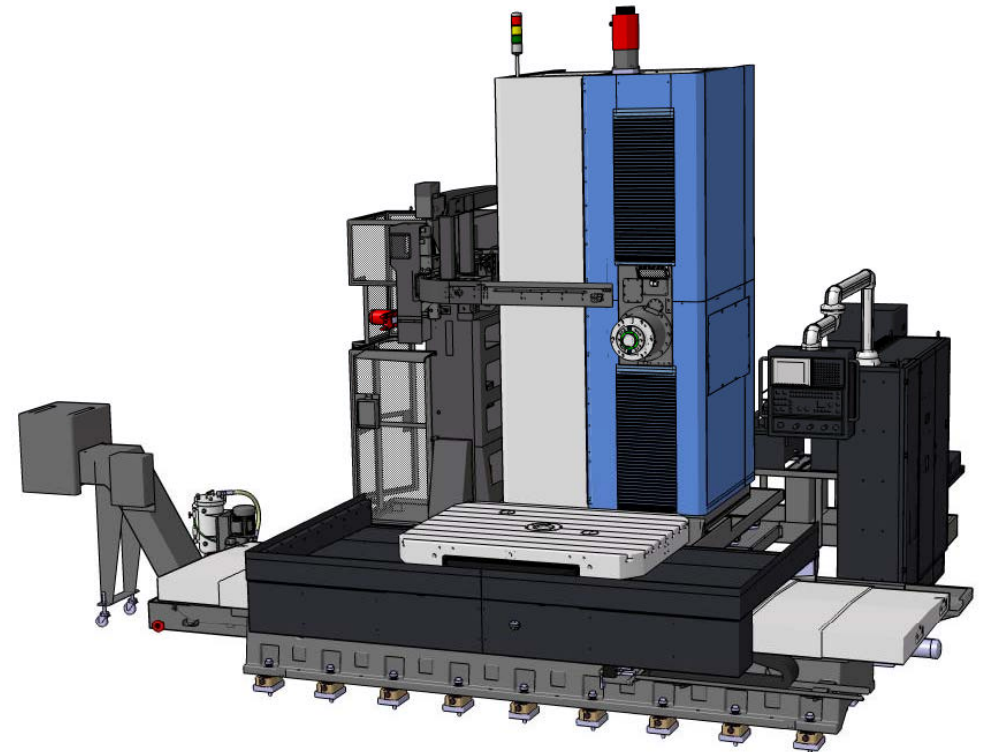
High speed boring spindle



- Spindle motor : 26/22 kW
- Spindle speed : 4,000 r/min
- Torque : 2,835 N·m

Machine Dimension

Length X Width X Height : 6,000 X 8,000 X 4,900 mm



2. INTRODUCTION OF DBC SERIES_DBC 130 II

▣ INTRODUCTION OF DBC 130 II

General & Conventional Type Model

- Production than 1000 machines
- More stable and improved model for conventional job and heavy working

Stroke X/ Y/ Z

3,000 / 2,000 / 1,600 mm

Load Capacity

15,000 kg

Spindle

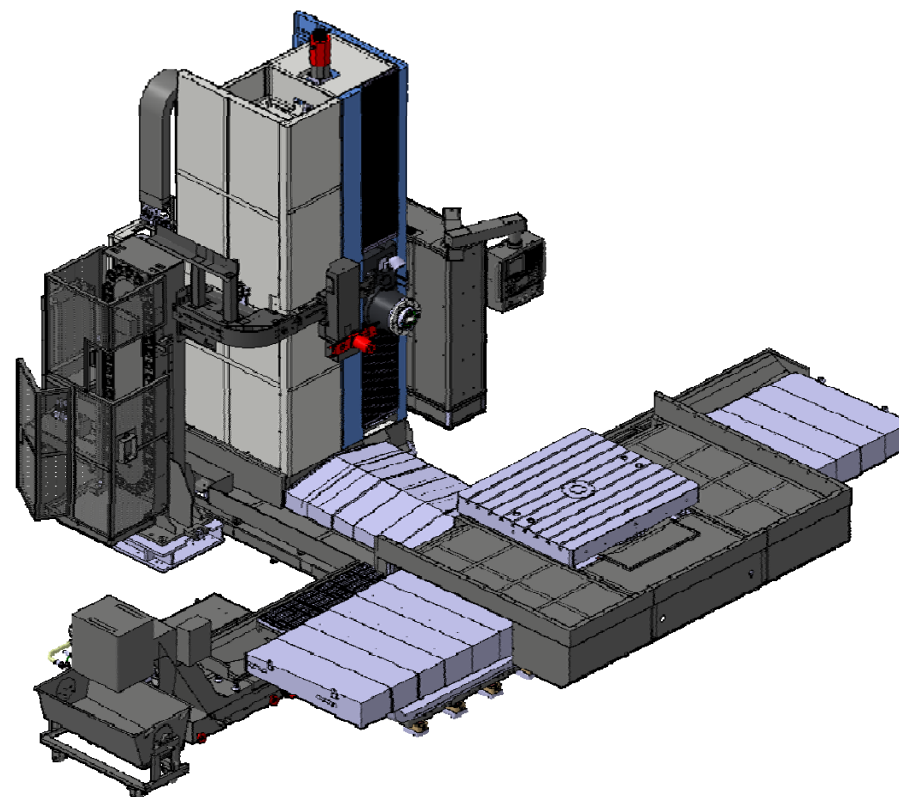
High-torque and powerful spindle for heavy duty cutting



- Spindle motor : 26/22 Kw
(Opt. 45/37kW)
- Spindle speed : 2,500 r/min
- Torque : 3,392 N·m
(Opt. 3684 N·m)

Machine Dimension

Length X Width X Height : 7,650 X 9,050 X 5,000 mm



2. INTRODUCTION OF DBC SERIES_DBC 130P II

▣ INTRODUCTION OF DBC 130P II

Heavy Load Work-piece Model

- Plain table type heavy load performance
- Without B-axis

Stroke X/ Y/ Z

3,000 / 2,000 / 1,600 mm

Load Capacity

20,000 kg

Spindle

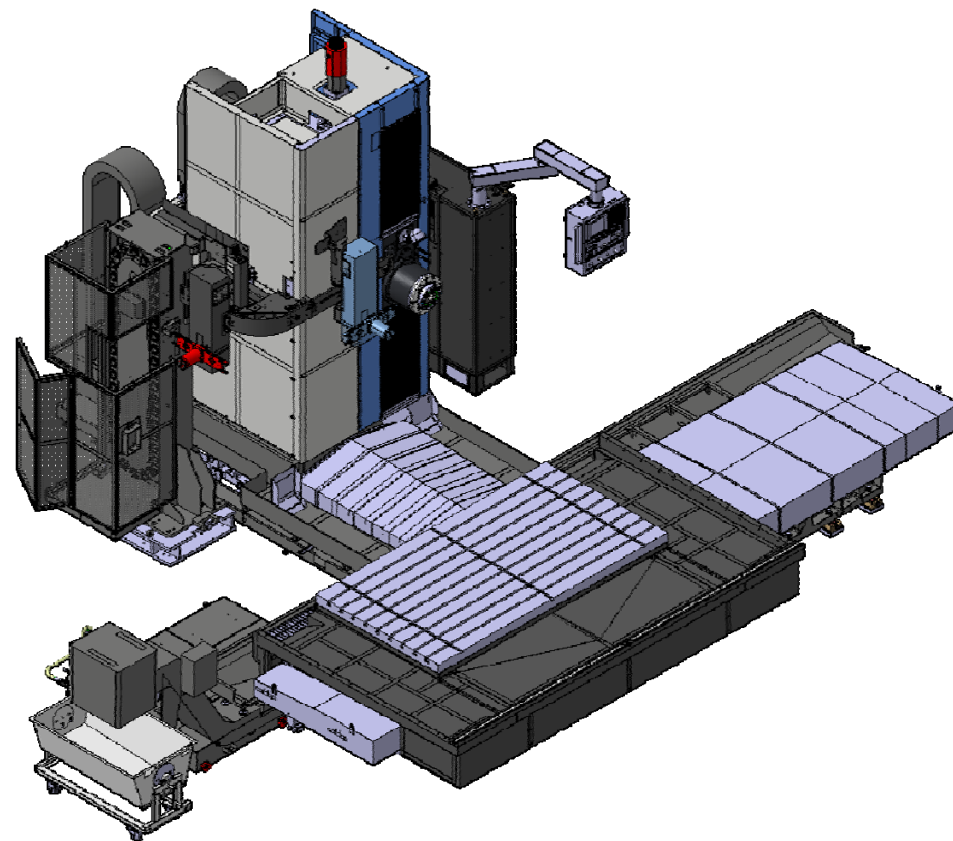
High-torque and powerful spindle for heavy duty cutting



- Spindle motor : 26/22 Kw
(Opt. 45/37 kW)
- Spindle speed : 2,500 r/min
- Torque : 3,392 N·m
(Opt. 3684 N·m)

Plain Type Table

Table size : 1,600 x 3,000 mm



2. INTRODUCTION OF DBC SERIES_DBC 130L II

▣ INTRODUCTION OF DBC 130L II

Heavy Load & Large Sized Work-piece Model

- Wide work area through axes extension
- Column moving type for heavy load workpiece
- Multitasking for various work-piece

Stroke X/ Y/ Z

4,000 / 2,500 / 2,000 mm

Load Capacity

15,000 (Opt. 20,000 kg)

Spindle

High-torque and powerful spindle for heavy duty cutting



- Spindle motor : 26/22 Kw
(Opt. 45/37 kW)
- Spindle speed : 2,500 r/min
- Torque : 3,394 N·m
(Opt. 3684 N·m)

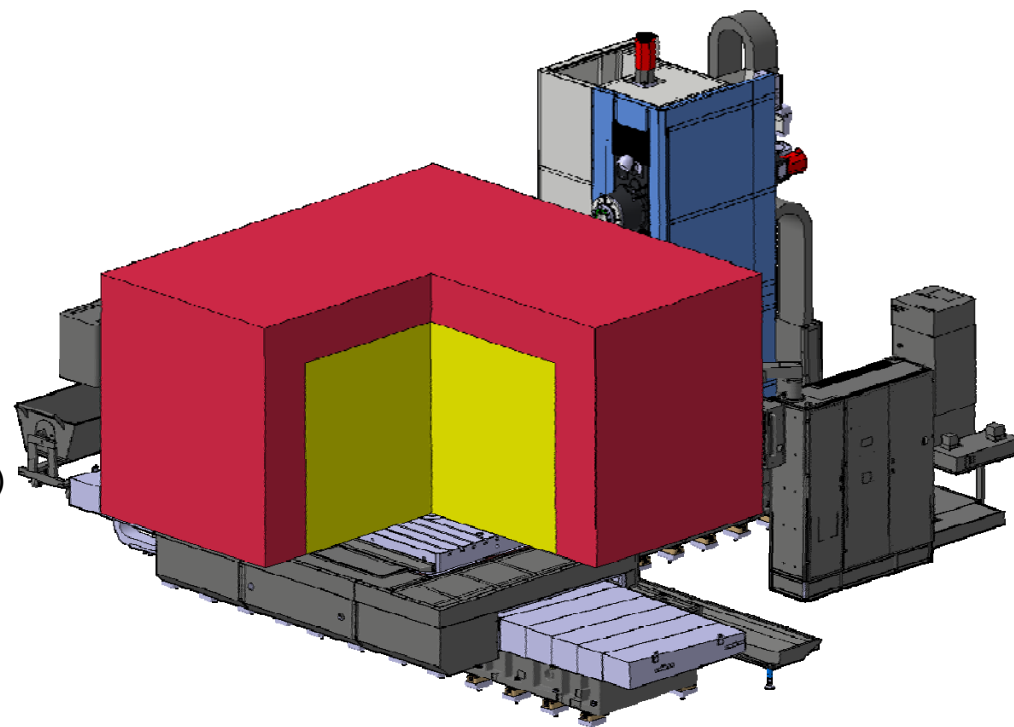
Maximum Work Diameter



- DBC 130 II
- $\Phi 3,900$ mm



- DBC 130L II
- $\Phi 4,800$ mm



2. INTRODUCTION OF DBC SERIES_DBC 250 II

▣ INTRODUCTION OF DBC 250

High Speed Type Model

- High speed built-in spindle for high precision machining
- Equipped with $\Phi 250$ quill (stroke 500mm)
- Stable thermal growth of the spindle bearings despite a long run

Stroke X/ Y/ Z

3,000/ 2,000/ 1,600 mm

Load Capacity

15,000 kg

Spindle

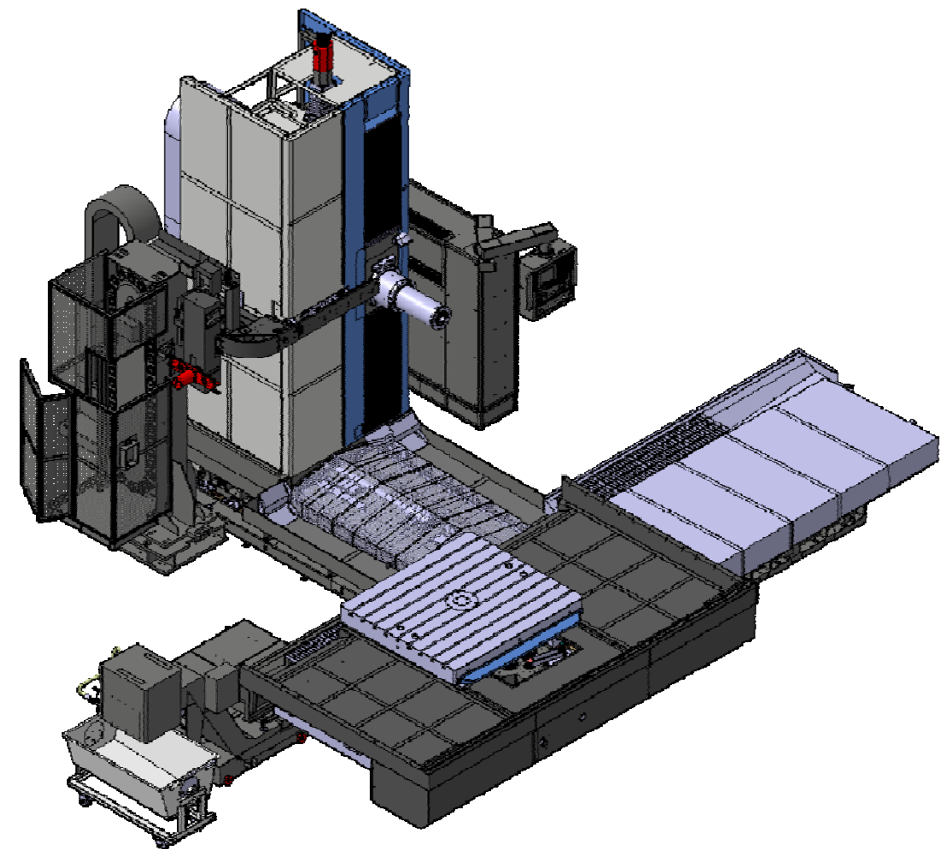
High speed built-in quill spindle



- Spindle motor : 30/22 kW
- Spindle speed : 6000 r/min
- Torque : 598 N·m

Machine Dimension

Length X Width X Height : 7,650 X 9,050 X 5,000 mm



2. INTRODUCTION OF DBC SERIES_DBC 250L II

▣ INTRODUCTION OF DBC 250L

High Speed & Large Sized Work-piece Model

- High speed built-in spindle for high precision machining
- Equipped with $\Phi 250$ quill (stroke 500mm)
- Stable thermal growth of the spindle bearings despite a long run

Stroke X/ Y/ Z

4,000/ 2,500/ 2,000 mm

Load Capacity

15,000 kg

Spindle

High-speed built-in spindle for high precision machining



- Spindle motor : 30/22 kW
- Spindle speed : 6000 r/min
- Torque : 598 N·m

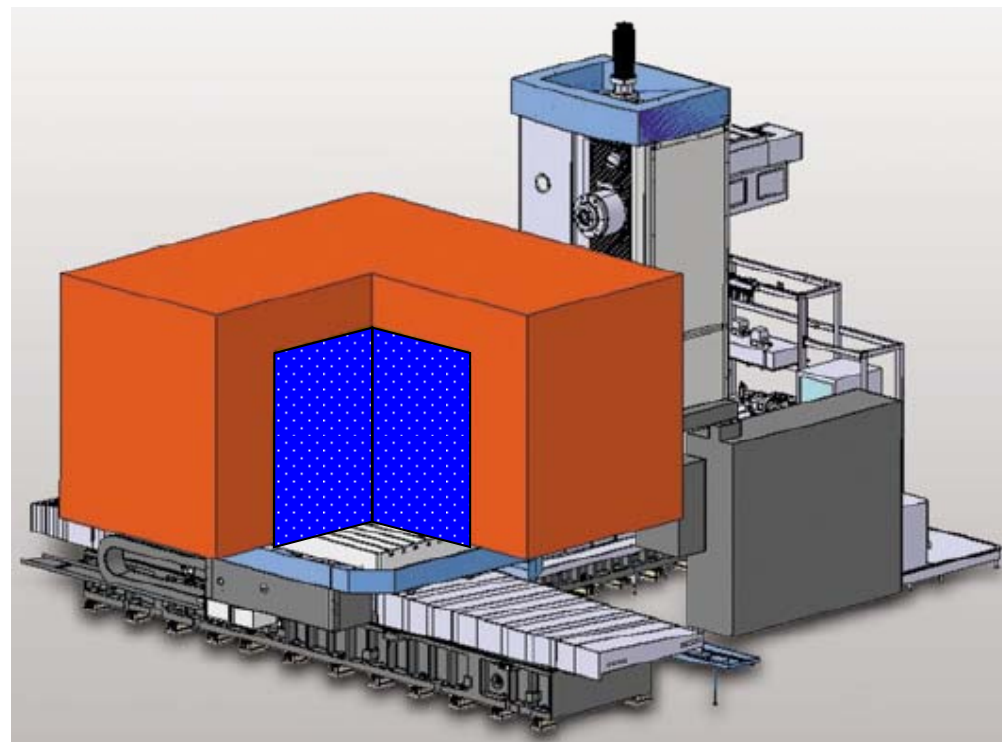
Maximum Work Diameter



- DBC 250
- $\Phi 3,400$ mm



- DBC 250L
- $\Phi 4,500$ mm



1. DBC LINE-UP

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- DBC 250 II / DBC 250L II

3. OVERVIEW OF NEW MODEL

- DBC 130S (Draft)
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- DBC 130 (P,L) II

4. DBC Sales guide

- PRIMARY MARKET OF HBM

▣ INTRODUCTION OF DBC 130S

Compact class

- Compact & Powerful !!!! Excellent Performance!!!
NC boring mill with Spindle diameter Ø130mm spindle
- Offering middle size workpiece solution for various machining

Stroke X/ Y/ Z/ W

2,000 / 1,500 / 1,200 / 600 mm

Load Capacity (mm) X/Y/Z

7,000 kg

Spindle

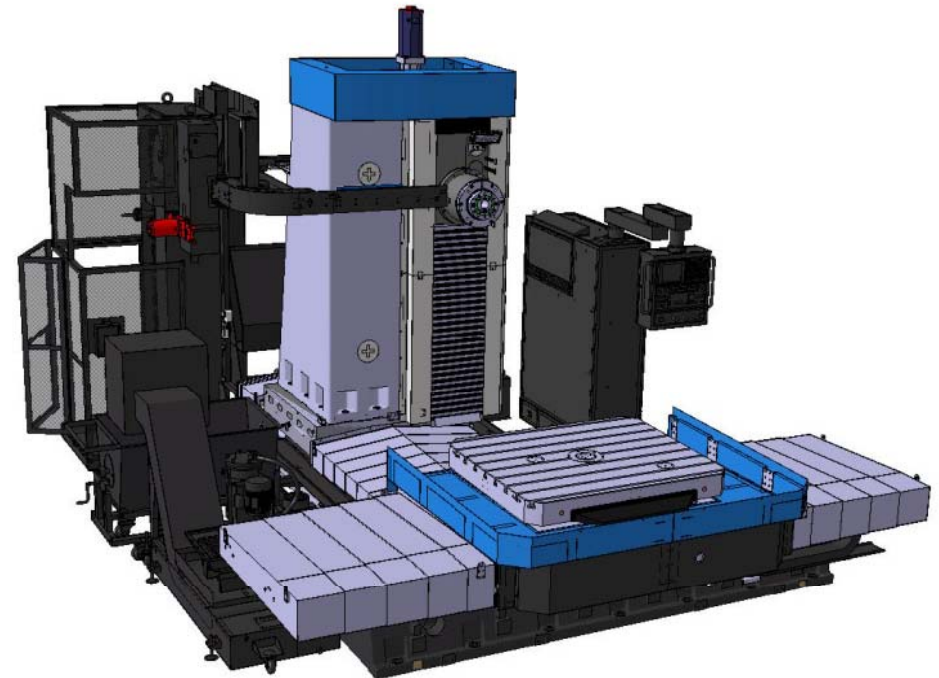
High speed boring spindle



- Spindle motor : 37/30 kW
- Spindle speed : 2,500 r/min
- Torque : 3,029 N·m

Machine Dimension

Length X Width X Height : 5,300 X 5,900 X 4,050 mm



Launching schedule

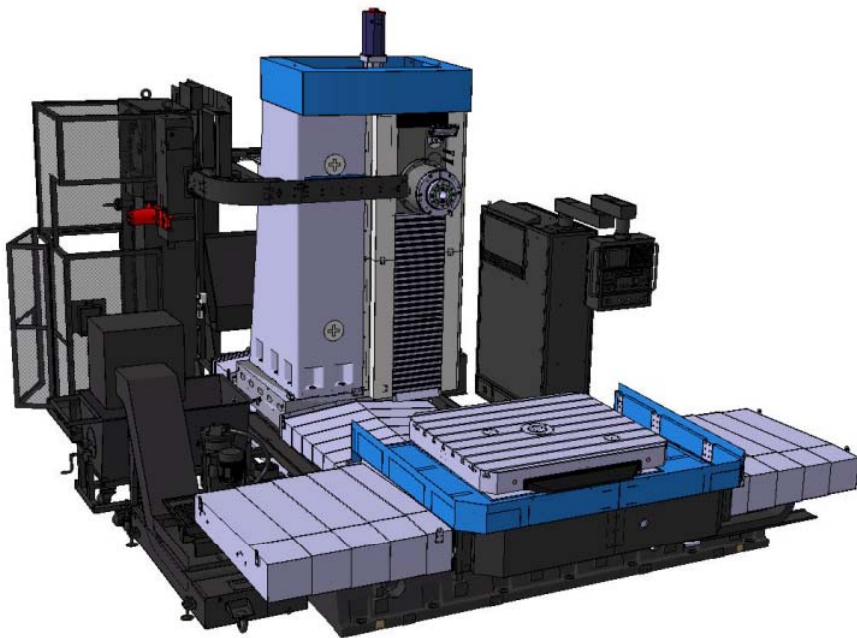
- **Launching** : Feb.2014
- **Delivery**: M + 4months

DBC 130S: Concept & Sales point

New model

Compact & Powerful !!!! Excellent Performance!!!
NC boring mill with Spindle diameter Ø130mm spindle

DOOSAN
NEW
Model



For small work
Compact !!

X/Y/Z stroke
2000/1500/1200

Small but
Powerful !!

Spindle motor power/ Max. Torque
37/30 kW , 3092 N.m

Excellent
Performance !!

Milling test : **1440 cm³/min**
cutting depth (W axis 600mm) **0.9mm**

High Value
Cost effective

List price(Draft)
80% (Compare to DBC130II)

DBC 130S: SPECIFICATION

New model

		Unit	DOOSAN					MICROCUT		KURAKI(Taiwan site)	
			DBC 110S	DBC130S	DBC110	DBC 130 II	DBC 130L II	HBM-4T	HBM-5T	AKB-11	AKB-13
Spindle	Boring spindle dia.	mm	110	130	110	130	130	130	130	110	130
	Taper	ISO	#50	#50	#50	#50	#50	#50	#50	#50	#50
	Max. speed	rpm	3000	2500	4000	2500	2500	3000	3000		2500
	Motor power(cont/30min)	KW	26/22 [30/22]	37/30	26/22 [30/22]	26/22 [30/22, 45/37]	26/22 [30/22, 45/37]	30/22	45/37		30/22
	Torque	N.m	1137 [1273]	3029	2668 [3060]	3392 [3940]	3392 [3940]	3002	2362		3452
Travel	X-axis	mm	2000	2000	2500	3000	4000	2000 [3000]	3500 [1500]	2000	3000
	Y-axis	mm	1500	1500	2000	2000	2500	2000	2600	1500	2000
	Z-axis	mm	1200	1200	1500	1600	2000	1400	1400 [2000]	1450	1600
	W-axis	mm	500	600	550	700	700	700	700	500	700
	(W2)		-	-	-	-	-	-	-	-	-
	Feed speed	m/min	6	6	6	4	4	5	5		6
	Spindle center to table surface distance	mm	0~1500	0~1500	0~2000	0~2000	0~2500			0~1500	0~2000
	Spindle nose to table center	mm	550~1750	550~1750	550~2050	750~2350	750~2750				800~2400
Rapid	X/Y/Z/W	m/min	12/12/12/6	12/12/12/6	12/12/12/6	10/10/10/6	10[7]/8/10/6	10/10/10/8	8/10/10/8	12/12/12/6	10/10/10/6
Table	Max. workpiece load	tons	7	7	10	15	15[20]	8/[10]	10 [15]	6.5	6.5
	Table size	mm	1400x1600	1400x1600	1400x1800	1600x1800	1600x1800 [1800x2000]	1400x1600 [1600x1800]	1800x2200	1400x1600	1400x1600
	T-slot	mm	24H8X9	24H8X9	24H8X9	24H8X9	24H8x9	22H8 x 9	22H8 x 11	22H8X7	22H8X7
ATC (Option)	Tool capacity	PC	40,60,90	40,60,90	40,60,90	40,60,90	40,60,90	60	60	40	40
	Max. tool diameter(cont.)	mm	130	130	130	130	130	125	125	125	125
	Max. tool diameter	mm	250	250	250	250	250	250	250	240	240
	Max. tool length	mm	600	600	600	600	600	300[500]	300[500]	400	400
	Max. tool weight	kg	25[30]	25[30]	25[30]	25[30]	25[30]	25	25	25	25
	Max. unbalance tool load	kg						100	120		
	Tool change time(TTT)	sec	20	20	20	20	20	16	16		
Weight	Machine weight	kg	24000	24000	24000	43000	48000	40000	49000		35000
	NC system		F32iA	F0iM	F31iA	F31iA	F31iA	F32i	F32i	F0iMD	F0iMD



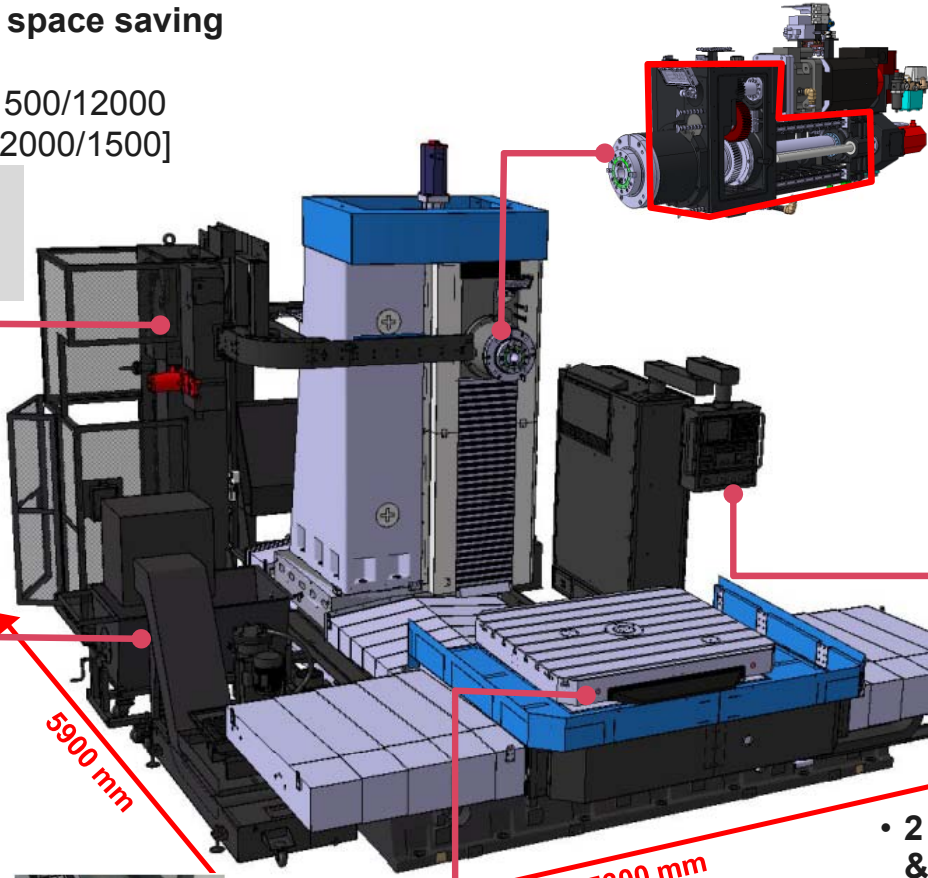
DBC 130S: MAJOR UNIT

New model

- **Compact Structure for space saving**
 - X/Y/Z stroke
 - DBC130S[SL*]: 2000/1500/12000
[2500/2000/1500]

* [SL] specification can be changed. Need contact to R&D in advance

- **ATC Magazine (opt.)**
 - 40/60/90T
- **Max. tool diameter**
 - 130(cont.) / 250 mm



- **Rigid spindle & High power motor for Productivity**
 - More rigid and compact with its tail bracket united with head body
 - Good **Cutting performance(DBC130II level)** with boring spindle(W axis) protruding

		DBC130S	Microcut HBM 4T
Spindle speed	r/min	2500	2000 [3000]
Motor power (cont/30min)	kW	37/30	30/22
Torque	N.m	3029	3002
W-axis	mm	600	700

- **Rear side Chip conveyor** for space saving
- Application of **hinged plate conveyor** including clutch and safety switch to detect chip trouble
- **Foot steps** for safety in working area



- **2 step- pendant arm & membrane operating button** for convenient operation
- slope type **Operation Panel**



- **Indexing table**
 - 1400mm x 1600mm
 - Max. allowable weight :7000kg



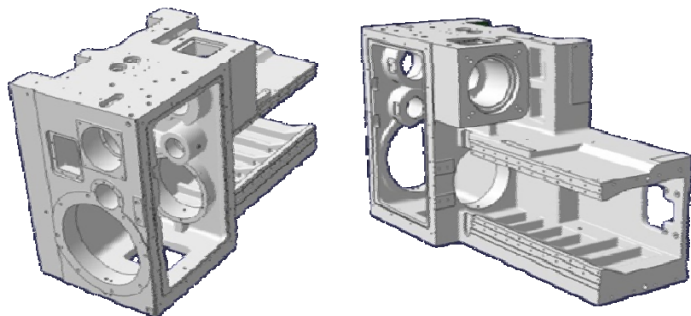
Optimal spindle development for Minimizing Gear vibration and noise

- Minimize Gear vibration & noise with Helical Gear

- 2- steps gear (Microcut 2 worm gear spindle)

- **W- Stroke** : 600mm

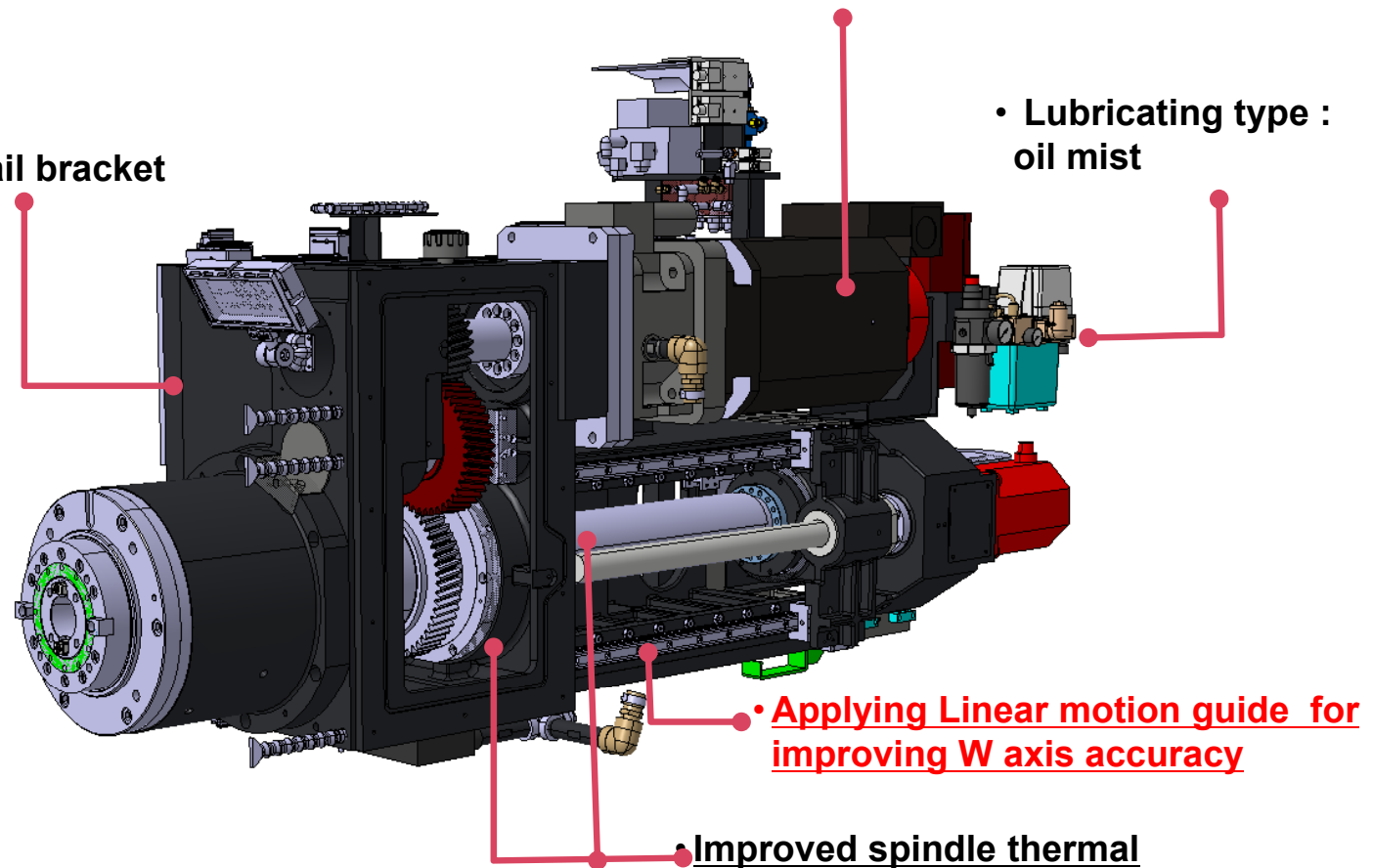
- **Rigid and compact Spindle with its tail bracket united with head body**



- **High power Spindle Motor**

- 37/30kw (std.) vs Microcut HBM 4T 30/22kW

- **Lubricating type :**
oil mist



- Applying Linear motion guide for improving W axis accuracy

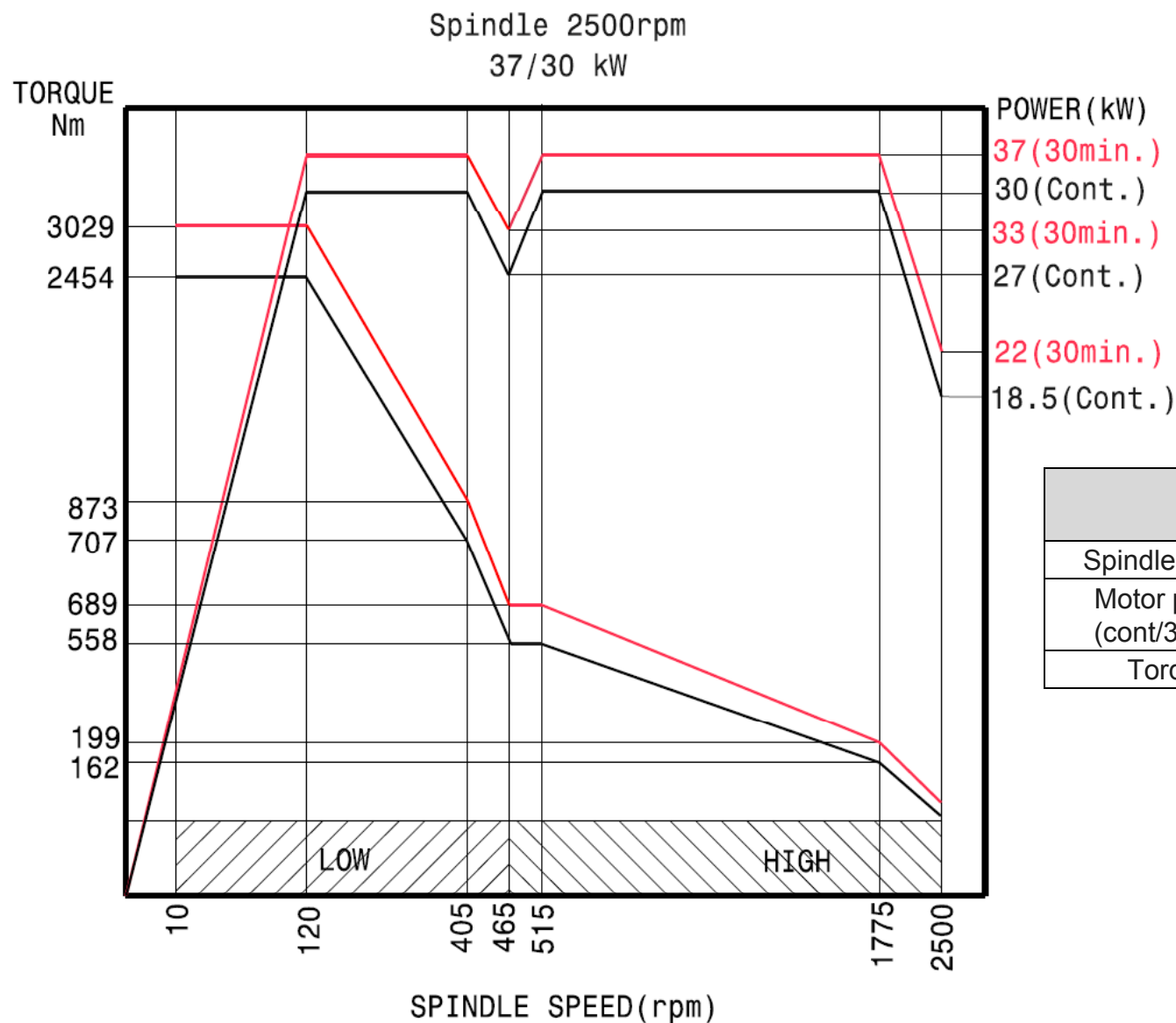
- Improved spindle thermal displacement

- Boring spindle internal cooling & rear bearing with oil cooling jacket

DBC 130S: SPINDLE TORQUE CHART

New model

DBC 130S 37/30 kW



		DBC130II	DBC130S	Microcut HBM 4T
Spindle speed	r/min	2500	2500	2000 [3000]
Motor power (cont/30min)	kW	26/22 [45/37]	37/30	30/22
Torque	N.m	3392	3029	3002

DBC 130S: PERFORMANCE

New model

- ✓Milling test result is better comparing to DBC130II
- ✓Improved cutting performance after optimizing spindle parameter.

DBC130S 37/30kW Milling cutting test

T.B.D

FACEMILL	2013.12.12										
사용공구	HOLDER INSERT	재질	가공방법 (절삭유)	회전수 (RPM)	FEED (mm/min)	날당이송 (mm)	절삭폭 (mm)	절삭깊이 (mm)	절삭체적 (cm ³ /min)	주축 부하율(%)	비고
D125/D160 (8z / 10z)	SPER1906ZETR M17 T350M	SM45C	DRY	300	2000	0.83	100	5.0	1000	82%	D125(8Z, V117)
				300	1800	0.75	100	7.0	1260	105%	D125(8Z, V117)
				300	1800	0.75	100	8.0	1440	120%	D125(8Z, V117)
				300	1560	0.65	100	9.0	1404	117%	D125(8Z, V117)
				300	1440	0.60	100	10.0	1440	125%	D125(8Z, V117)

DBC 130II										
Model	Tool	MAT.	Speed (rpm)	Depth (mm)	Width (mm)	Feed (mm/min)	Feed per Tooth	Volume (cm ³ /min)	Load (%)	Remark
DBC 130 II α40	D125 F/M	SM45C	300	8.0	120	1200	0.50	1152	121%	GOOD
			300(고속)	10.0	120	960	0.40	1152	127%	GOOD
			217(저속)	10.0	120	960	0.55	1152	124%	GOOD
DBC 130 II α22	D125 F/M		300	9.0	100	900	0.38	810	121%	GOOD
			300	10.0	100	840	0.35	840	126%	GOOD

*1월 중 DBC 130II 표준/45kw 고출력 옵션에 대하여 스피들 최적화 파라메타 변경 후 검증 예정임.



DBC 130S: PERFORMANCE

New model

✓W axis -Cutting performance(cutting depth) is similar with DBC130II

Cutting condition :Tool dia. $\Phi 125\text{mm}(8z)$, Cutting width 80mm, Feed 300mm/min

Length of W-axis Spindle speed		W200	W300	W400	W500	W550	W600	W700	Remark
				S390	S330	S420	S390		
DBC 130S	depth			2.0	1.5	1.2	0.9	-	Finish cutting
DBC 130 II $\alpha 40$	depth			S420	S420	-	S420	S315	
				2.0	1.5	-	1.0	0.5	Finish cutting
DBC 130 II $\alpha 22$	depth	S300	S405	S450	S450	-	S315	S315	
		6.0	3.5	2.0	1.5	-	1.0	0.5	Finish cutting



DBC 110 II ; QUALITY IMPROVEMENT

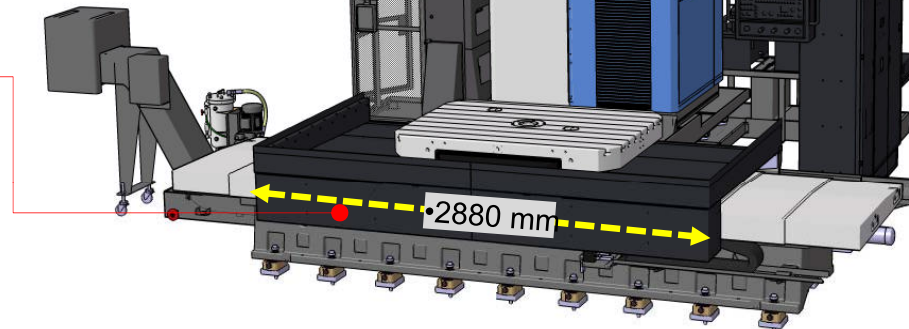
New model

- NEW** • All of cable & hose to Spindle are arranged in Cableveyor



- NEW** • 2 step- pendant arm & membrane operating button for convenient operation
- Extending length of Pendant arm
 - Lever switch for convenient axis feed operation
 - Portable MPG : add spindle operation button

- NEW** • Larger and slope type table chip pan to ensure working space on installing workpiece



Spindle M03

Spindle STOP

Spindle M04

DBC 110 II ; OPERATOR CONVENIENCE

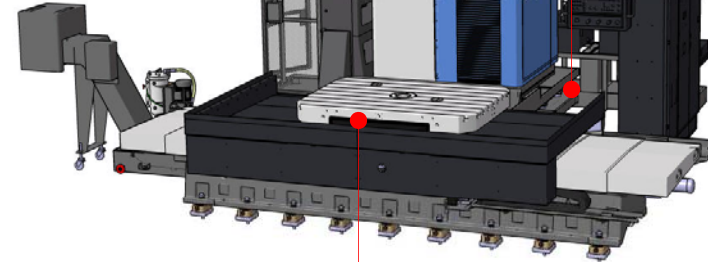
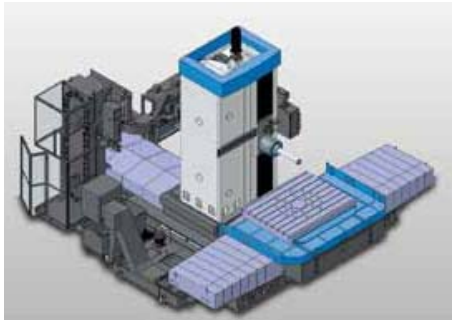
New model

NEW • Design improvement •

- Covers Design Upgrade to protect coolant leakage & oil mixing

NEW •

- Prevent coolant leakage, coolant contamination and chip accumulation
- Tray slope

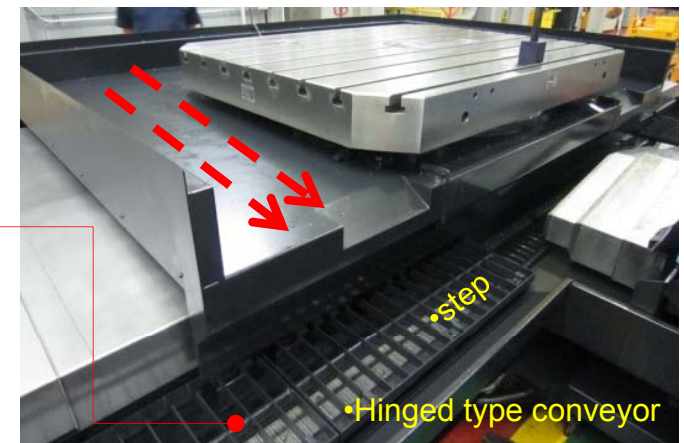


NEW •

- slope type table chip pan for good drainage and chip disposal

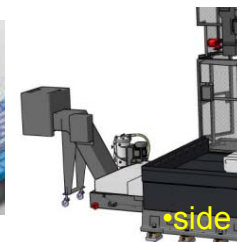
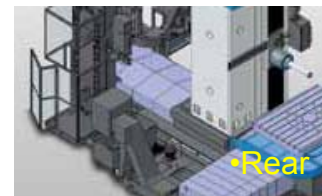
NEW •

- Application of hinged plate conveyor including clutch and safety switch to detect chip trouble



NEW •

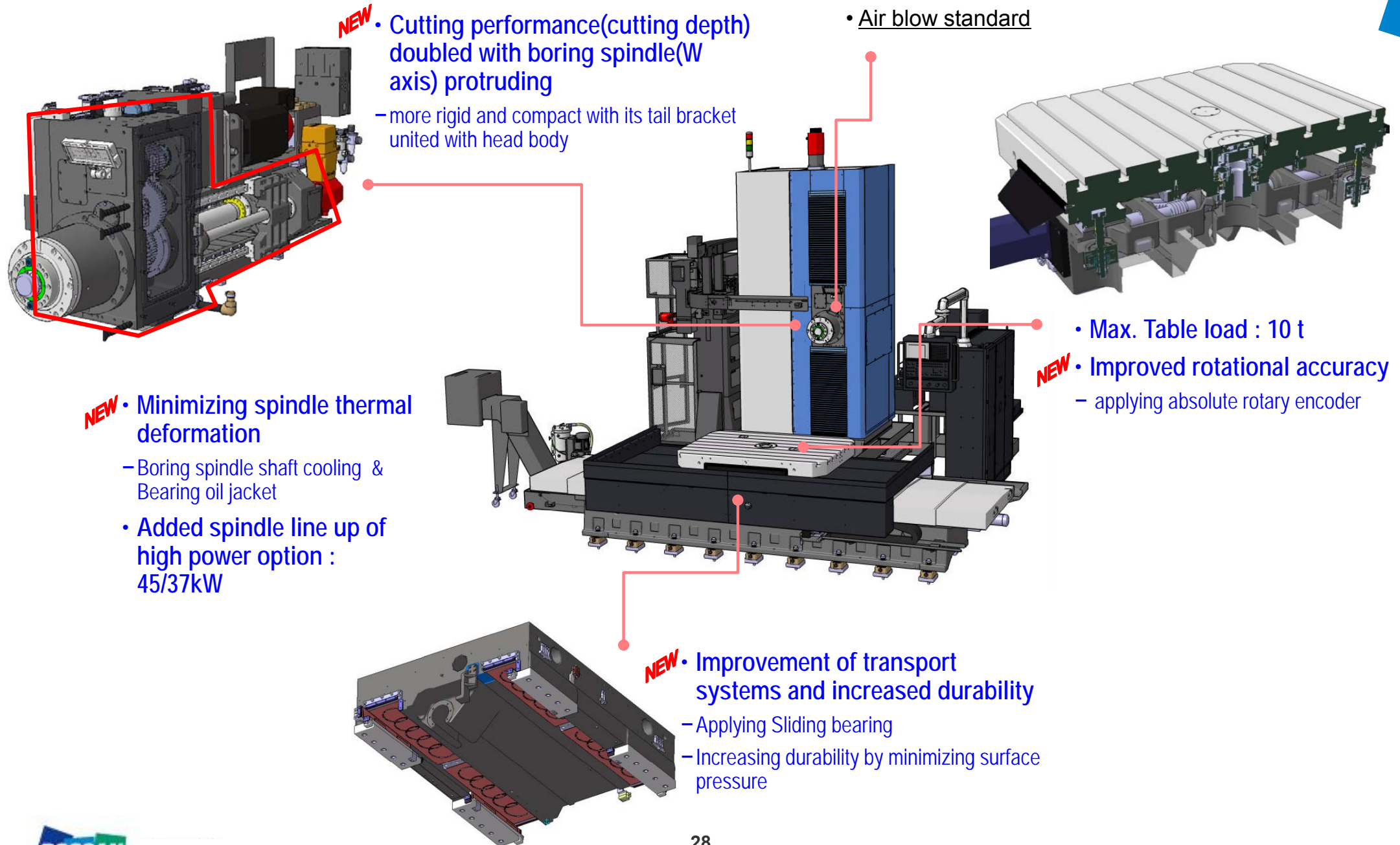
- Foot steps for safety in working area
- Coolant tank direction (opt): Side type or Rear type



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DBC 110 II ; PERFORMANCE

New model



DBC 110 II ; MAJOR SPECIFICATION

New model

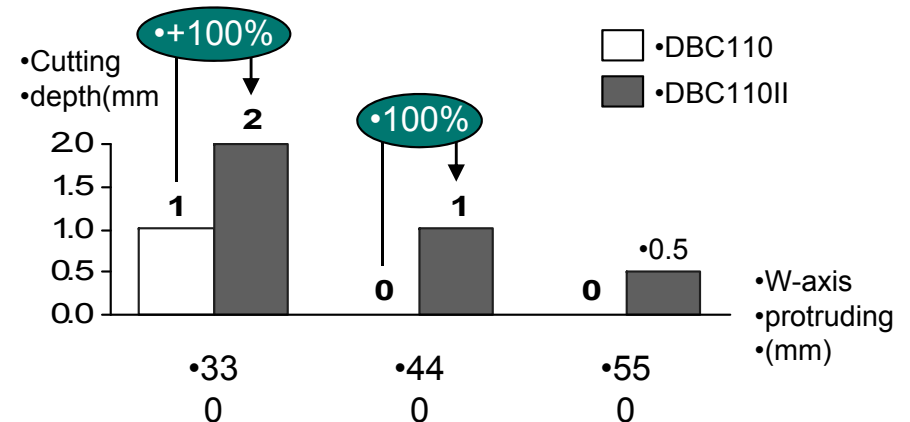
Specification

	ITEM	DBC 110 II
Axes	X (mm)	2500
	Y (mm)	2000
	Z (mm)	1500
	W (mm)	550
	spindle center ~ table plane (mm)	0 ~ 2000
	spindle nose ~ table center (mm)	550 ~ 2050
Table	size (width X length) (mm)	1600 X 1800 (std.)
	max. load (kg)	10000 (std.)
	indexing degree	0.001
Spindle	speed (r/min)	4000
	Orientation	BZ Sensor
	change steps	3
	spindle taper	ISO #50, 7/24 taper
	motor power (30min/con.) (Kw)	26/22 (std.) 45/37 (opt.)
Feed	rapid (X/Y/Z/W) (mm/min)	12000/12000/12000
	feed (X/Y/Z/W) (mm/min)	6000
	B axis (r/min)	1
ATC	tool storage (EA)	40
	tool shank,	MAS 403 P50T-1 (45°)
	max. tool length (mm)	130
	tool length (adjacent pockets empty)	250
	max. tool length (mm)	600
	max. tool weight (kg)	25
	tool selection	fixed
Dimension	installation dimension (mm)	6000 X 8000
	height (mm)	4820
	weight (kg)	36000
Controller		Fanuc 31iA

Key point specification.

► Performance

- Cutting performance(cutting depth) doubled with boring spindle(W axis) protruding by improving rigidity of spindle unit



► Quality improve

- Improved coolant leakage
- Fluent chip disposal

► Operation convenience

- Larger and slope type table chip pan to ensure working space on installing workpiece
- Good drainage and chip disposal by slope type table chip pan
- 2 step- pendant arm & membrane operating button for convenient operation

DBC 110: X-axis Scale as STD. → DBC110 II: X-axis Scale as OPT New model

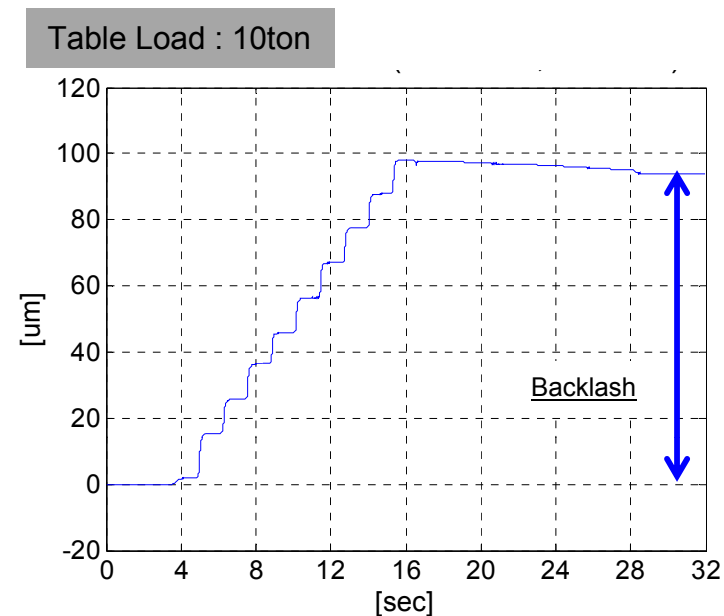
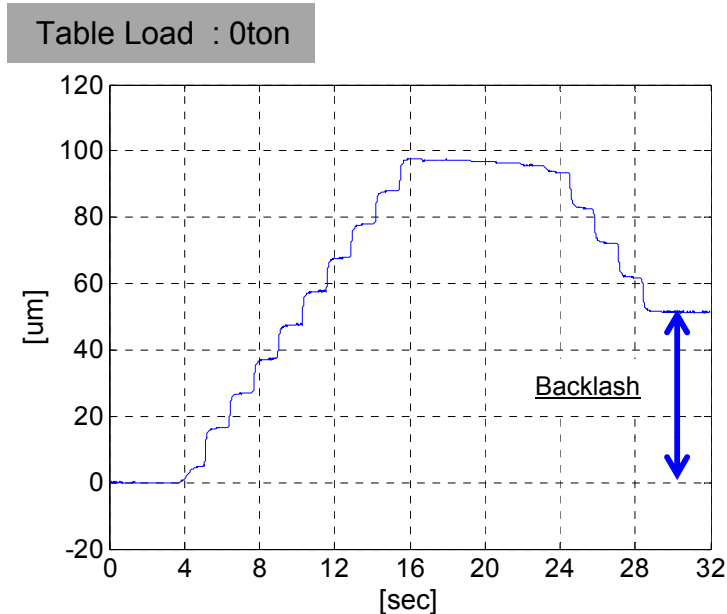
DBC 110

- ✓ Backlash gap by table load from 0 ton to 10 ton is big on X-axis of DBC110
- ✓ Thus, when DBC 110 developed, Linear scale was standard for minimizing backlash on X-axis.

DBC 110II

- ✓ DBC110II without X-axis Linear scale is standard.
- ✓ Backlash due to variation of load can be compensated by “* Automatic Backlash Compensation Function”
- ✓ Using G code or HMI screen

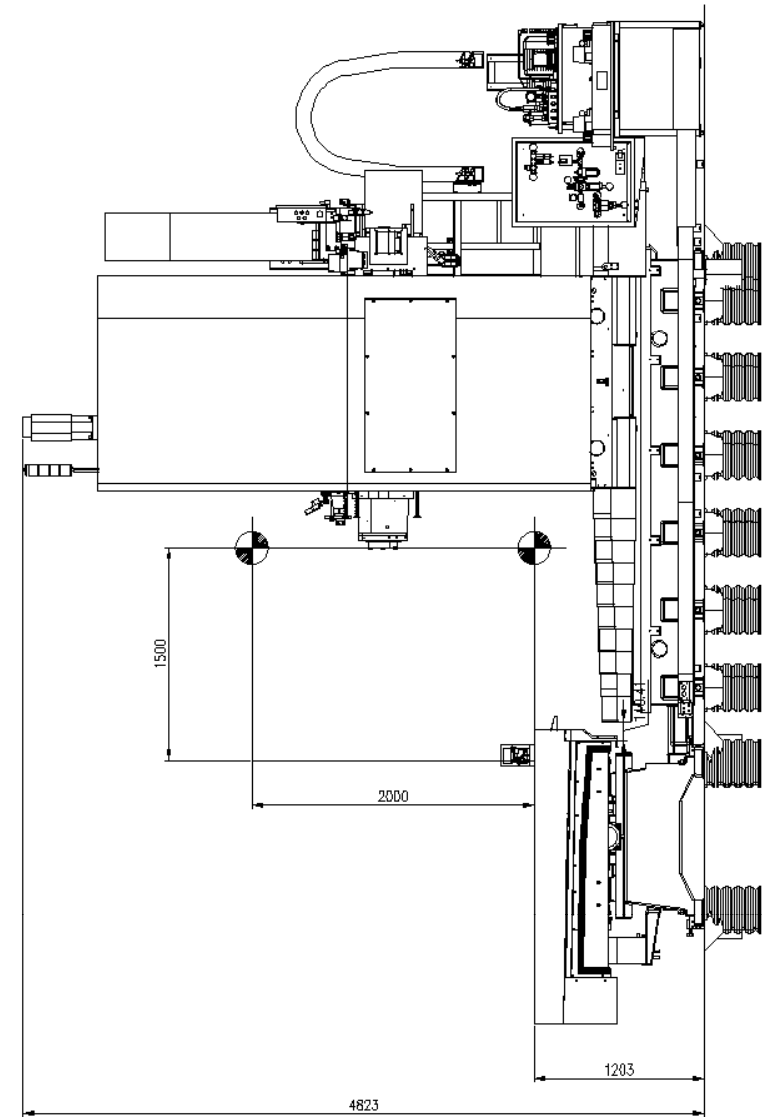
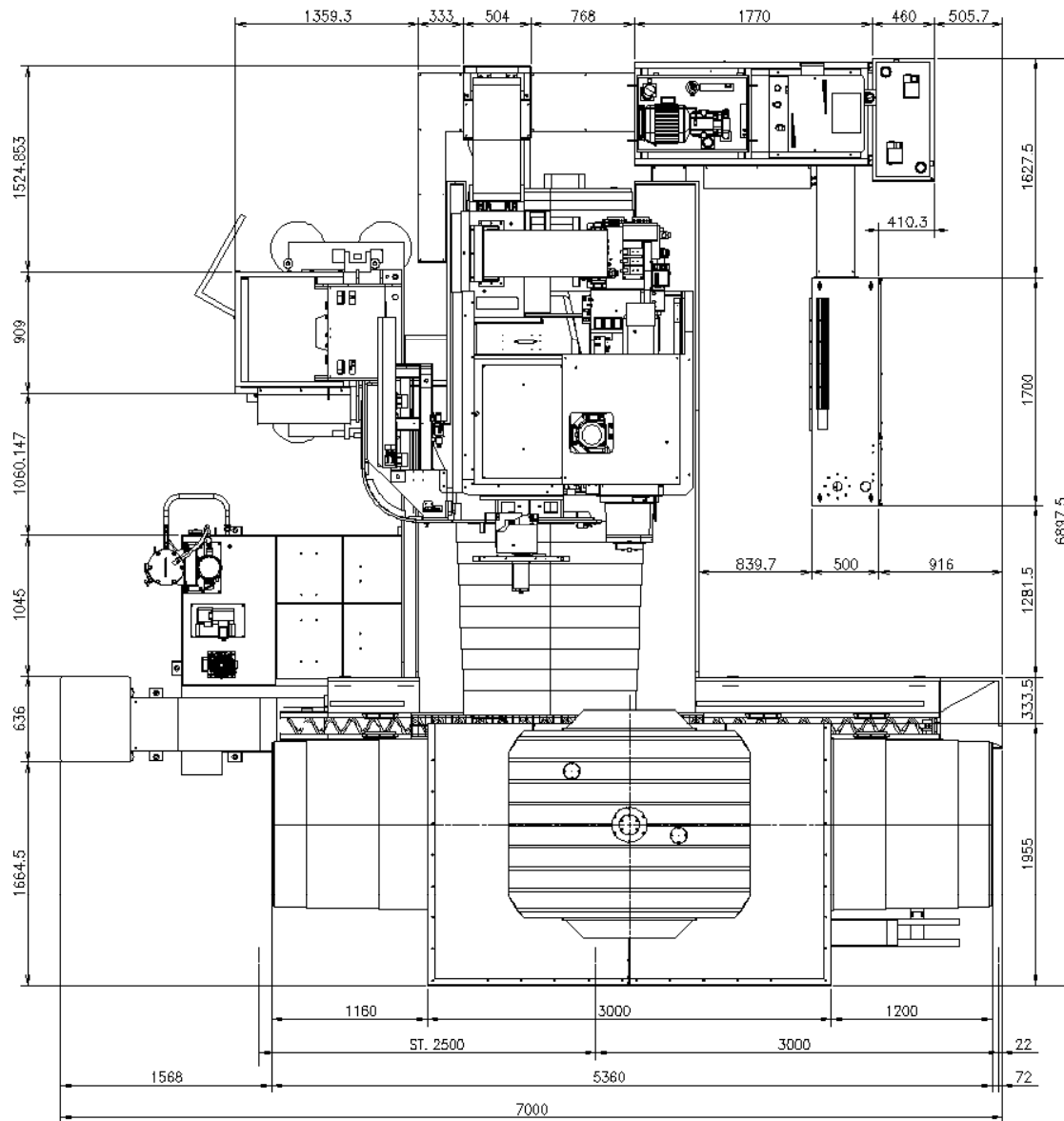
Backlash Comparison by table load



*Automatic Backlash Compensation Function for DBC 110S, DBC130(L)II is under development until at the end of 2013.
This function is for DBC 110II without Linear scale on X-axis. If you choose Linear scale(Xaxis), it is not necessary.

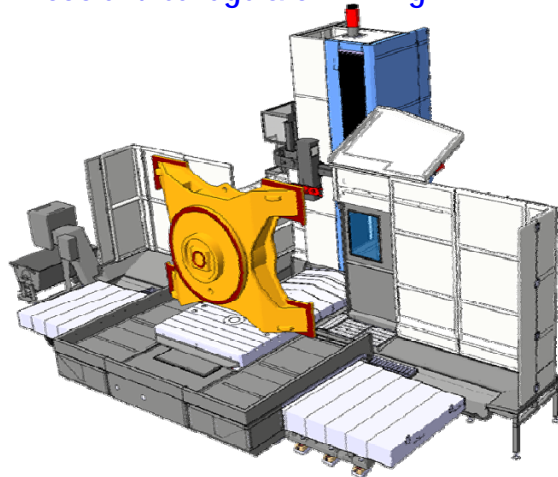
DBC 110 II ; LAYOUT

New model



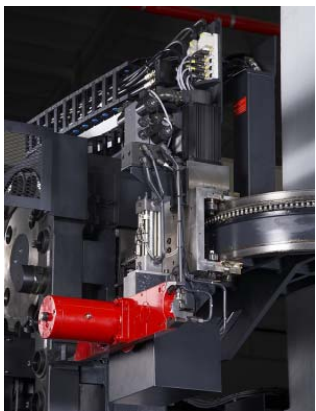
DBC 130 (P,L) II ; OPERATOR CONVENIENCE

- NEW**
- Covers Design Upgrade to protect coolant leakage & oil mixing



- Servo driven Tool magazine & Carriage to improve reliability

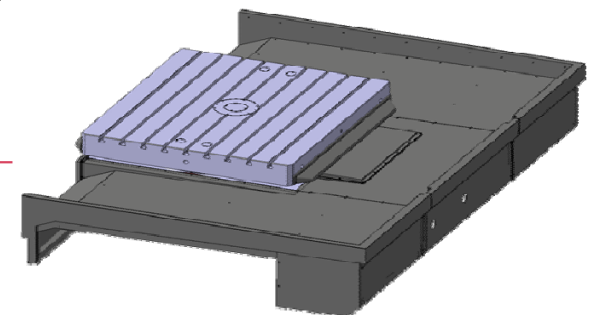
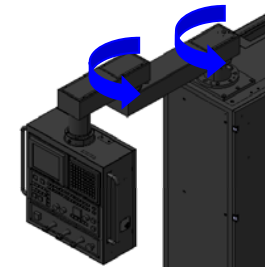
- NEW**
- Application of shock absorber to minimize vibration on changing tools



NEW

- Application of hinged plate conveyor including clutch and safety switch to detect chip trouble
- Foot steps for safety in working area

- NEW**
- 2 pivot joint arm & membrane type button
 - Improved operation convenience by using lever switch
 - Application of spindle rotation function in portable MPG



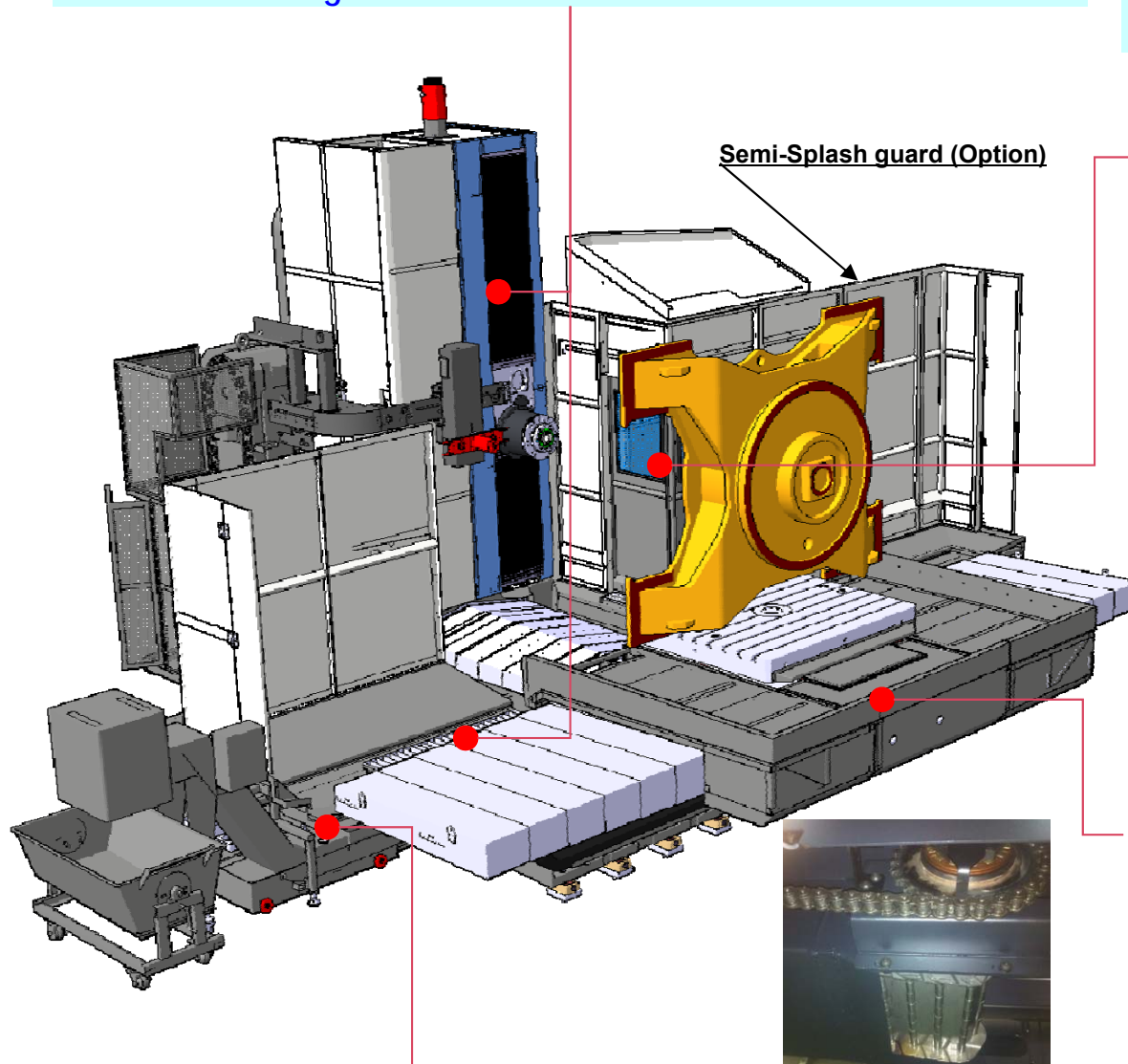
NEW

- Larger and slope type table chip pan to ensure working space on installing workpiece

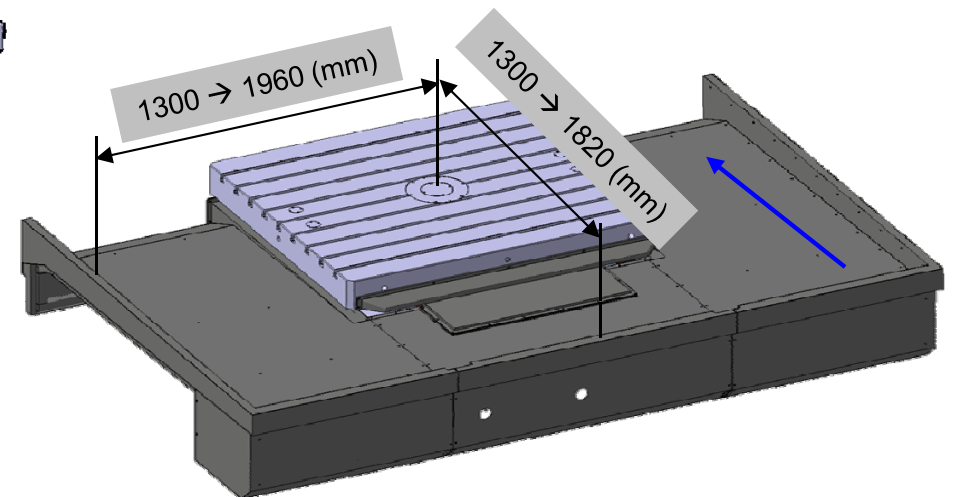
DBC 130 (P,L) II ; OPERATOR CONVENIENCE

✓ Improved Tray & Cover to protect coolant & oil leakage without additional sealing

✓ Portable MPG added spindle rotation & stop button



✓ Larger and slope type table chip pan to ensure working space on installing workpiece



• Application of clutch and safety switch to detect chip rewind

DBC 130 (P,L) II ; PERFORMANCE

NEW

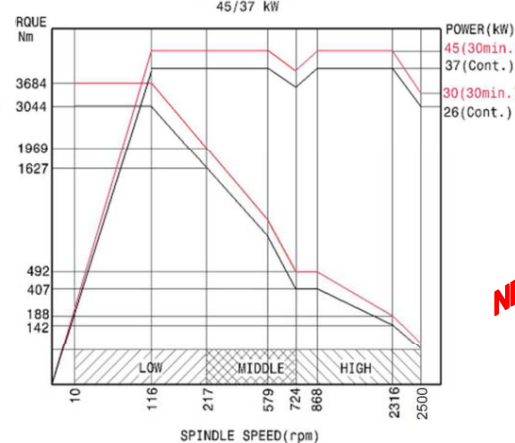
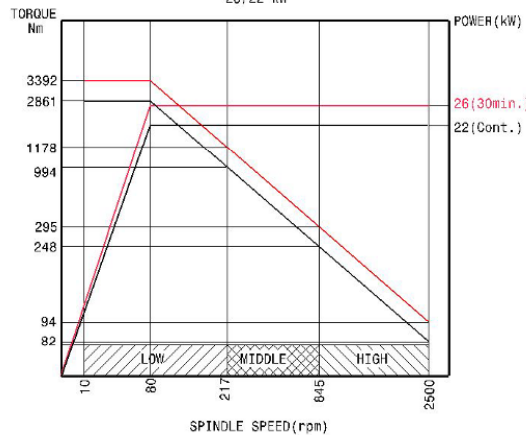
SPINDLE



Spindle 3000rpm
26/22 kW



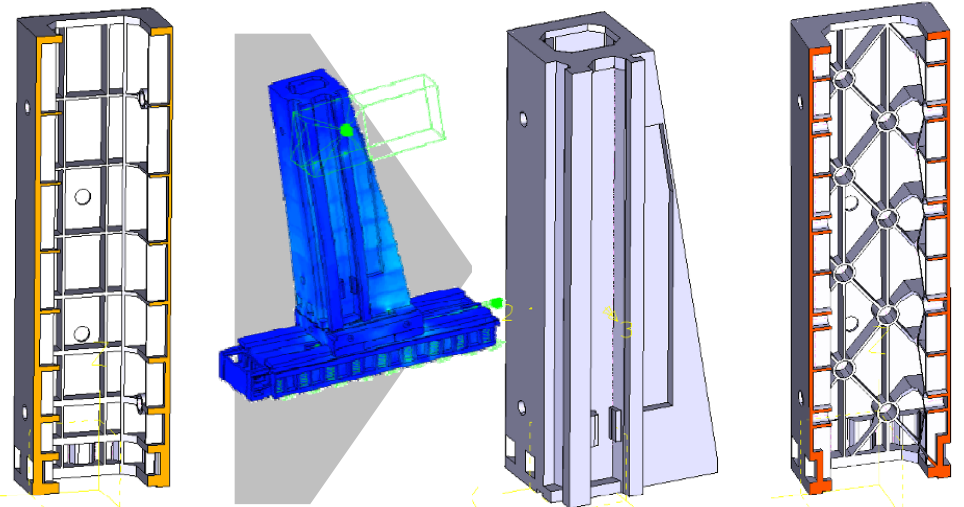
Spindle 2500rpm
45/37 kW



- The structure is more rigid and compact with its tail bracket united with head body.
- W slider is composed as near as possible to head body, which minimizes effect of the vibration caused by machining.
- Added spindle line up of high power option.

Motor (30min/con.)	Max speed	steps
26/22kW (3392/2861Nm)	2500r/min	3
45/37kW (3684/3044Nm)	2500r/min	3

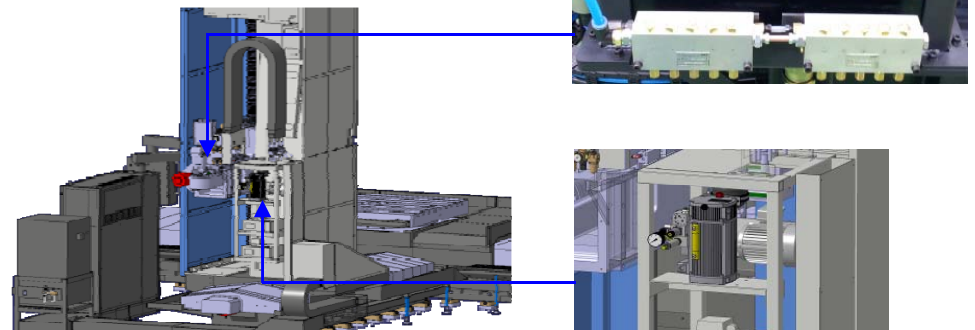
COLUMN STRUCTURE



- Optimal design through the application of slope shape and wide assembly plane improved dynamic stiffness of column structure.

NEW

ECO-FRIENDLY DESIGN



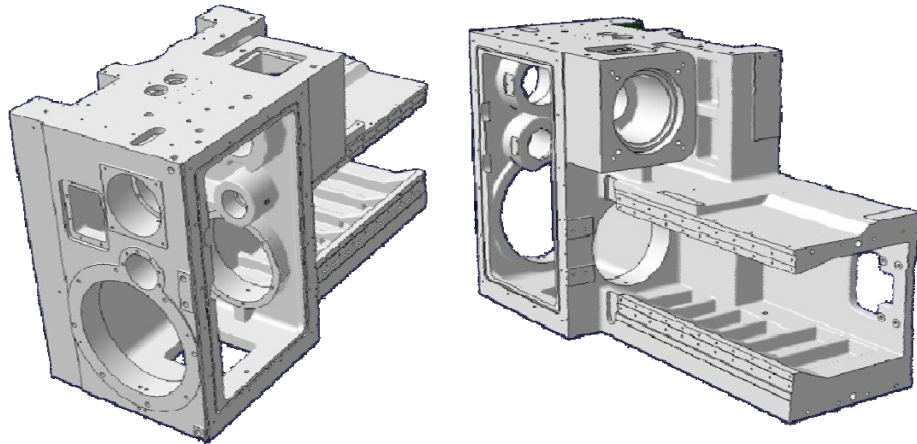
- Application of compact sized Hydraulic power pack.
- Main spindle bearing lubrication is applied to Oil-air lubrication type instead of Oil mist.
- Covers Design Upgrade to protect coolant leakage & oil mixing.



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DBC 130 (P,L) II ; HIGH STIFFNESS SPINDLE HEAD UNIT

✓The structure is more rigid and compact with its tail bracket united with head body.

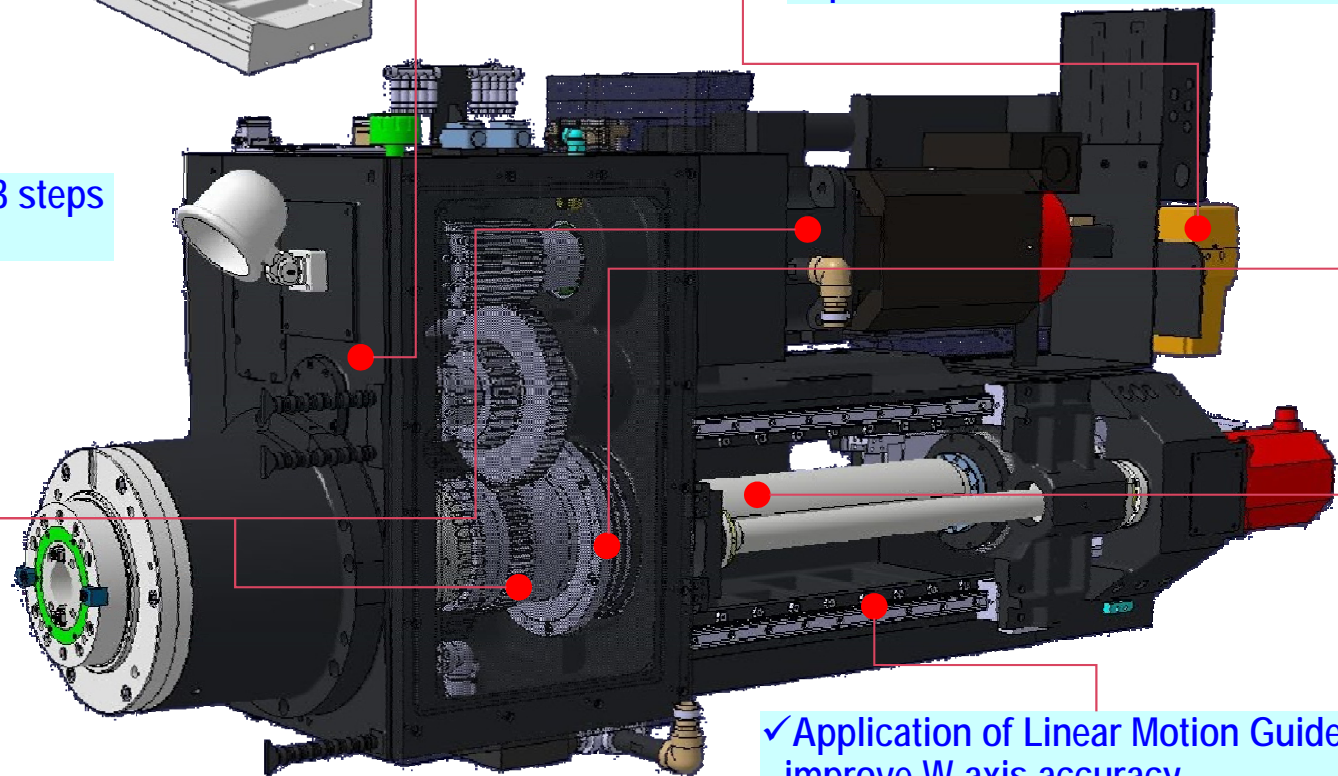
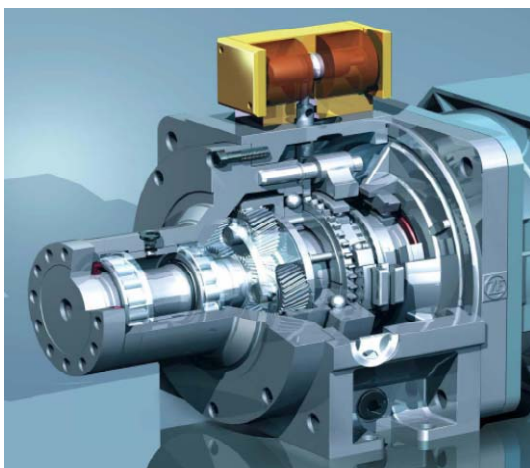


✓Application of Oil-air lubrication to reduce mist occurred in spindle head



✓Boring spindle center cooling line & cooling jacket of rear bearing housing to minimize spindle thermal deformation.

✓Mechanical Gear + Servo Gear ; 3 steps gear change



✓Application of Linear Motion Guide to improve W-axis accuracy.

DBC 130 (P,L) II ; MAJOR SPECIFICATION

Specification

	항목	DBC 130 II	DBC 130L II
Axes	X (mm)	3000	4000
	Y (mm)	2000	2500
	Z (mm)	1600	2000
	W (mm)	700	700
	spindle center ~ table plane (mm)	0 ~ 2000	0 ~ 2500
	spindle nose ~ table center (mm)	700 ~ 2300	700 ~ 2700
Table	size (width X length) (mm)	1600 X 1800 (STD. 15t) 1800 X 2000 (OPT. 13t) 2000 X 2200 (OPT. 12t)	1600 X 1800 (STD. 15t) 1800 X 2000 (OPT. 13t, 20t) 2000 X 2200 (OPT. 12t, 19t)
	max. load (kg)	15000 (STD)	15000 (STD) 20000 (OPT)
	indexing degree	0.001	0.001
Spindle	speed (r/min)	2500 (STD)	2500 (STD)
	Orientation	BZ Sensor	BZ Sensor
	change steps	3	3
	spindle taper	ISO #50, 7/24 taper	ISO #50, 7/24 taper
	motor power (30min/con.) (Kw)	26/22 (STD) 30/22, 45/37 (OPT)	26/22 (STD) 30/22, 45/37 (OPT)
Feed	rapid (X/Y/Z/W) (mm/min)	10/10/10/6 (STD)	10/10/10/6 (STD)
		—	7/10/10/6 (OPT)
	feed (X/Y/Z/W) (mm/min)	4000	4000
	B axis (r/min)	1 (STD) —	1 (STD) 0.75 (OPT)
ATC	tool storage (EA)	40/60/90	40/60/90
	tool shank,	MAS 403 P50T-1 (45 °)	MAS 403 P50T-1 (45 °)
	max. tool length (mm)	130	130
	tool length (adjacent pockets empty)	250	250
	max. tool length (mm)	600	600
	max. tool weight (kg)	25	25
	tool selection	fixed	fixed
Dimension	installation dimension (mm)	7,680X9,080	8,060 X 10,440
	height (mm)	5000	5400
	weight (kg)	43000	48000
Controller		Fanuc 31iB	Fanuc 31iB

Key point specification.

► Spindle nose ~ Table center line

- DBC 130 :
750~2350 (mm) → 700~2300 (mm)
- DBC 130L :
750~2750 (mm) → 700~2700 (mm)

► Spindle motor power

- Std.** **Opt.**
- 26/22 (kW) → 26/22 (Kw), 45/37 (kW)

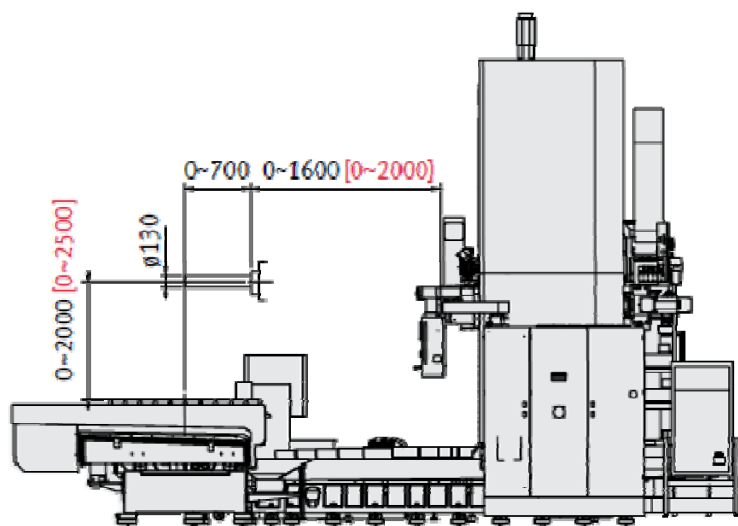
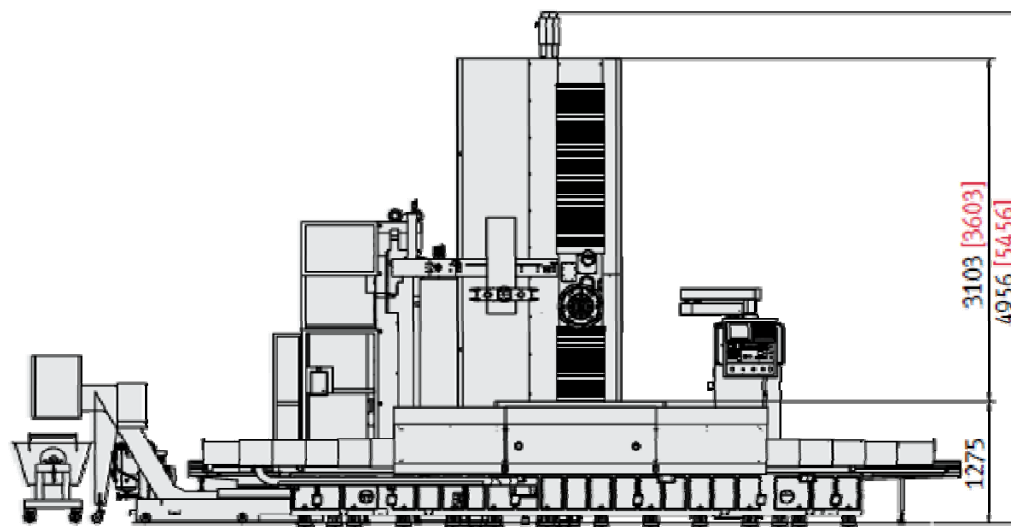
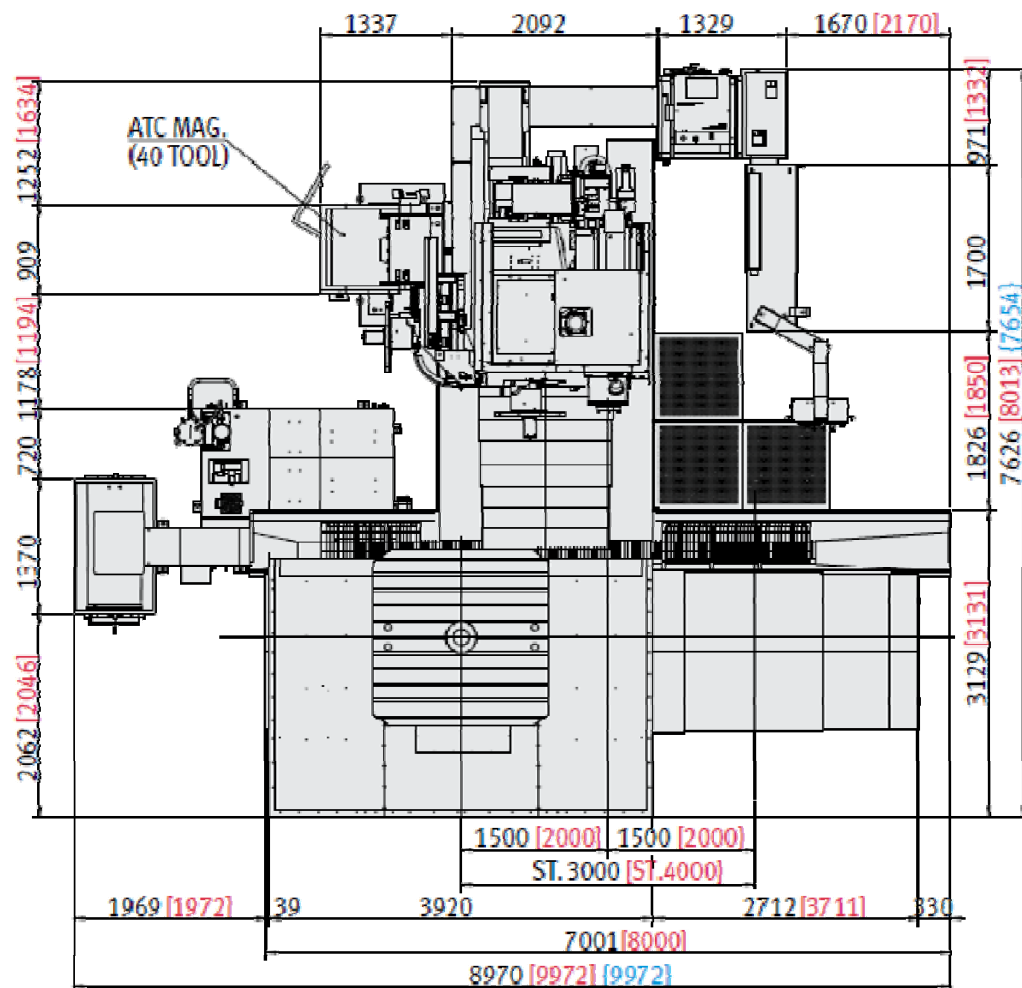
► Spindle Head : Applied BZ Sensor

► W axis Rapid : 10,000 → 6,000 (m/min)

► Installation dimension (mm)

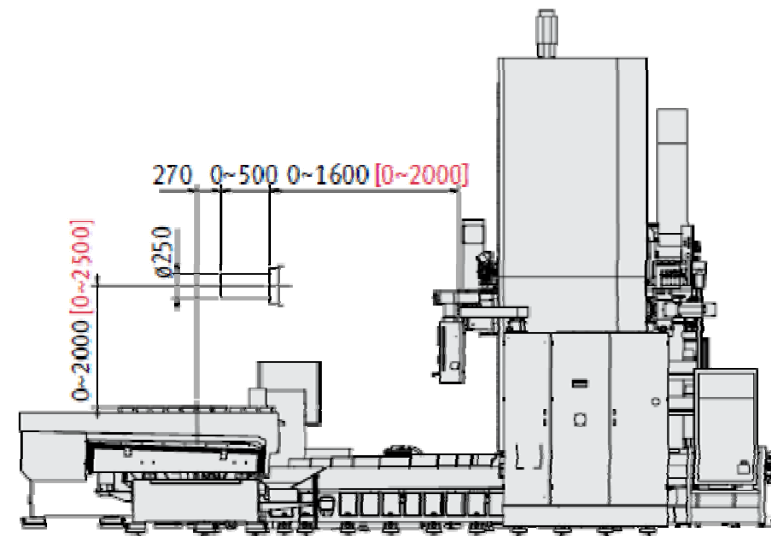
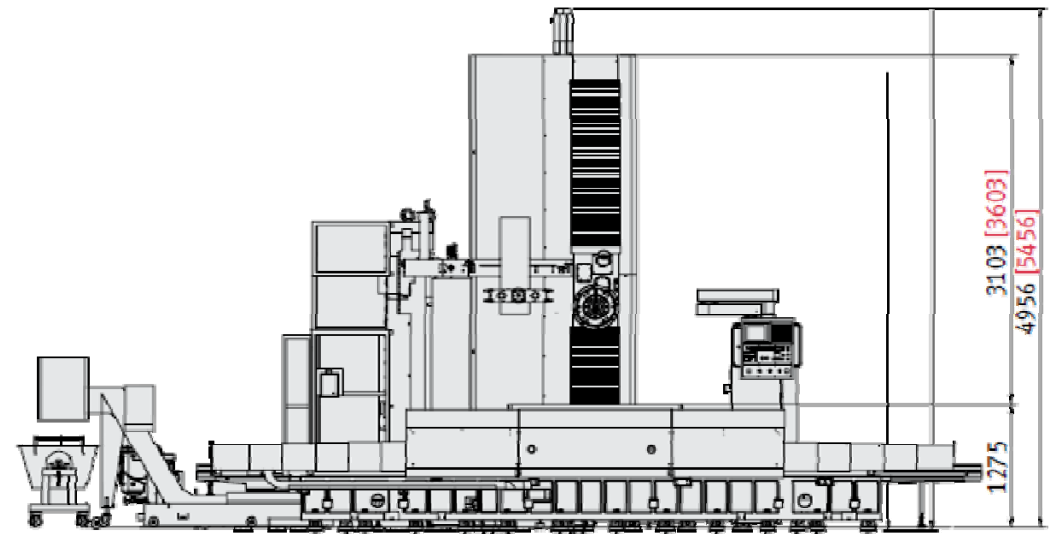
- DBC 130 :
7,400X8,400(mm) → 7,680X9,080 (mm)
- DBC 130L :
7,800X9,400(mm) → 8,060X10,440(mm)

DBC 130(L/P) II ; LAYOUT



[]: DBC130LII only
 { }: DBC130PII only

Technical drawing of the machine layout showing dimensions in mm. The drawing includes a top-down view of the machine with various components labeled. Dimensions are provided in millimeters, with some values in brackets indicating alternative or maximum dimensions. Key dimensions include: overall width 8970 [9972], overall height 2062 [2046], and specific component dimensions like 1337, 2092, 1329, and 1670 [2170]. A label 'ATC MAG. (40 TOOL)' points to a specific component.



1. DBC LINE-UP

2. INTRODUCTION OF DBC SERIES BY MODEL

- DBC 110S / DBC 110 II
- DBC 130 II / DBC 130P II / DBC 130L II
- DBC 250 II / DBC 250L II

3. OVERVIEW OF NEW MODEL

- DBC 130S (Draft)
- DBC 110 II
- DBC 130 (P,L) II

4. DBC Sales guide

- PRIMARY MARKET OF HBM



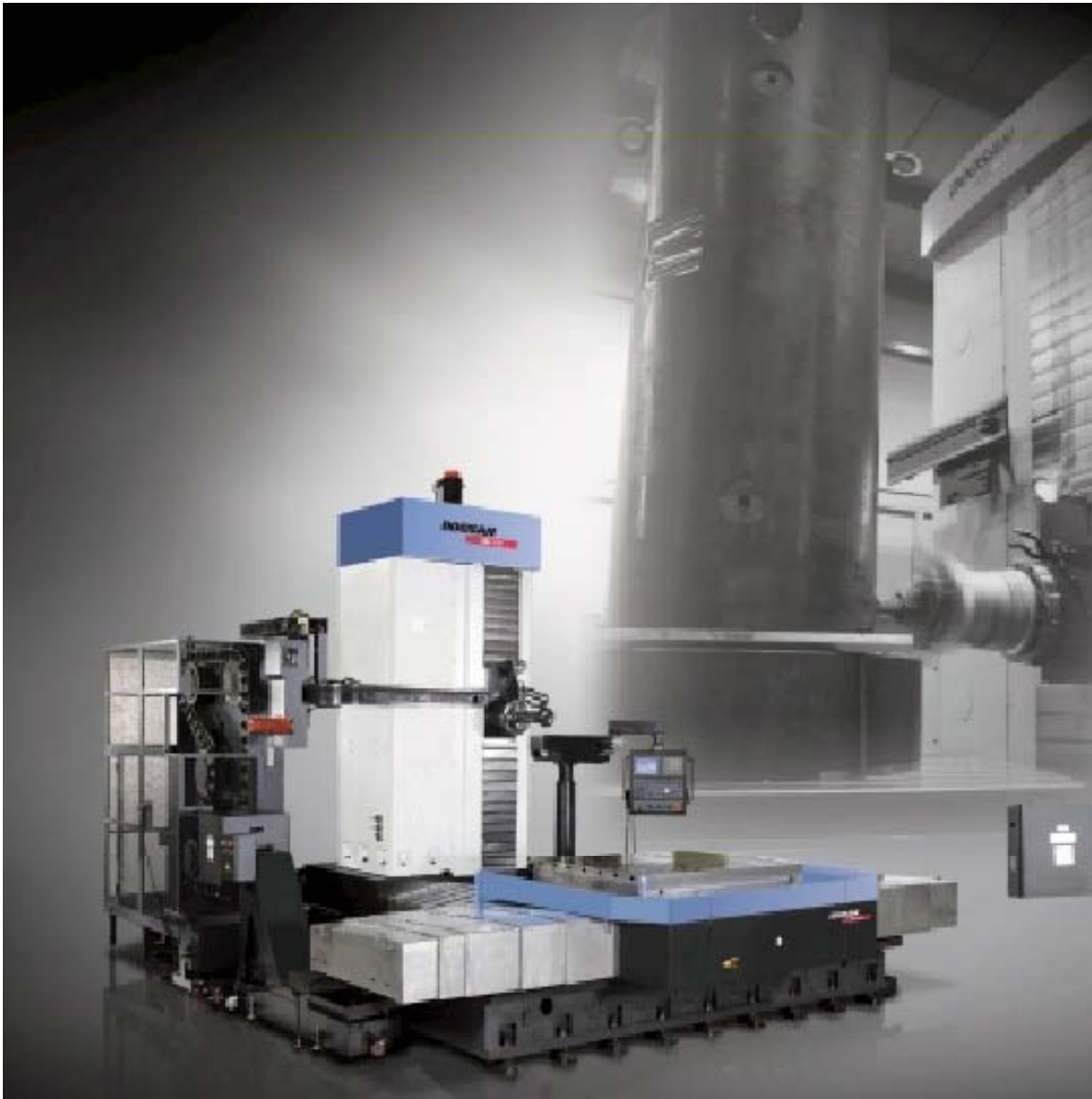
Doosan Infracore

HBM, DBC Series Sales Guide

(HBM : Horizontal Boring Mill)

August 2010
Machine Tools BG.
Product Development Team 3

TABLE OF CONTENTS



1 PRIMARY MARKET OF HBM

HIGH PRECISION

1. INJECTION MOLD
2. PRESS MOLD & DIE
3. IT INDUSTRY

MULTI-PURPOSE

4. GENERAL INDUSTRY
5. CONSTRUCTION EQUIPMENT

HEAVY & LARGE WORKPIECE

6. SHIP BUILDING
7. POWER GENERATION
8. WIND POWER
9. OIL-GAS INDUSTRY

1 PRIMARY MARKET OF HBM_1. INJECTION MOLD

HIGH PRECISION

I. APPLICATIONS

AUTOMOBILE BUMPER & PARTS



II. MAJOR VOC

1. High Precision Machining (Surface Roughness)
2. Small Spindle Thermal Deformation
3. Easy Chip Removal
4. Easy Work Set-up and Operation

III. BASE MODEL : Ø250 CLASS

IV. RECOMMENDED MACHINE FEATURES

1. High Speed Spindle
2. Linear Scale Feedback System (Ø250 Class Std.)
3. Thermal Compensation System
4. Chip Air Blow
5. 3-MPG
6. Coolant System
7. Lift-up Chip Conveyor
8. Semi S/G (High Type)
9. AFC Function
10. Work Load Counter Control
11. DSQ III



1 PRIMARY MARKET OF HBM_2. PRESS MOLD & DIE

HIGH PRECISION

I. APPLICATIONS

AUTOMOBILE DOOR & EXTERIOR



II. MAJOR VOC

1. High Precision Machining (Shape of Edge)
2. Small Spindle Thermal Deformation
3. Easy Chip Removal
4. Easy Work Set-up and Operation

III. BASE MODEL : Ø250 CLASS

IV. RECOMMENDED MACHINE FEATURES

1. High Speed Spindle
2. Linear Scale Feedback System (Ø250 Class Std.)
3. Thermal Compensation System
4. Chip Air Blow
5. 3-MPG
6. AFC Function
7. DSQ II

1 PRIMARY MARKET OF HBM_3. IT INDUSTRY

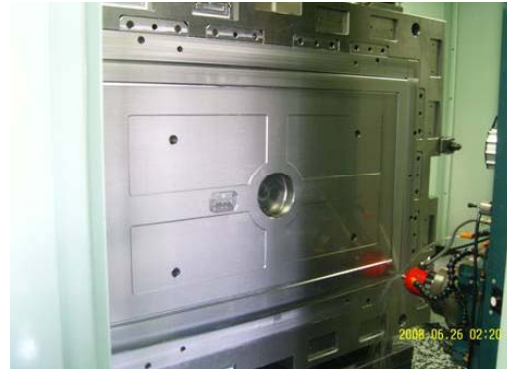
HIGH PRECISION

I. APPLICATIONS

■ LCD & PDP MOLD BASE



■ LCD & PDP INJECTION MOLD



■ TV PARTS



II. MAJOR VOC

1. High Productivity Machining
2. Wide Work Area
3. Small Spindle Thermal Deformation

III. BASE MODEL : Ø250 CLASS

IV. RECOMMENDED MACHINE FEATURES

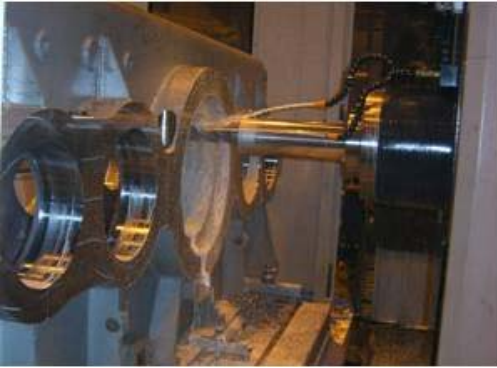
1. High Speed Spindle
2. X-axis Extension
3. Thermal Compensation System
4. DSQ II

1 PRIMARY MARKET OF HBM_4. GENERAL INDUSTRY

MULTI-PURPOSE

I. APPLICATIONS

WINCH MAIN HOUSING



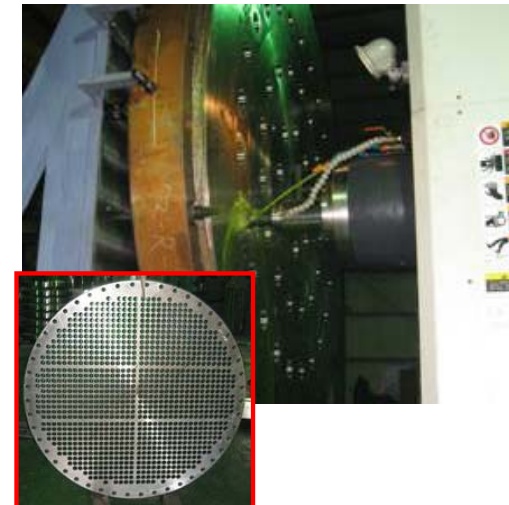
TURBINE BLADE



IRON MANUFACTURING EQUIPMENT



LARGE PIPING STRUCTURE



II. MAJOR VOC

1. High Productivity with Various Size Workpiece
2. Heavy Load Performance
3. Multitasking for Various Work

III. BASE MODEL : Ø110 & Ø130 CLASS

IV. RECOMMENDED MACHINE FEATURES

1. ATC & APC
2. TSC & Semi S/G
3. Easy Setup & Pattern Cycle

1 PRIMARY MARKET OF HBM_5. CONSTRUCTION EQUIPMENT MULTI-PURPOSE

I. APPLICATIONS

EXCAVATOR BOOM



EXCAVATOR MAIN FRAME



EXCAVATOR ARM



CONSTRUCTION VEHICLE WHEEL



II. MAJOR VOC

1. High Productivity by Special Line-up
2. Wide Work Area
3. Axis Extension for Large Workpiece
4. Multitasking for Various Work

III. BASE MODEL : Ø130 CLASS

IV. RECOMMENDED MACHINE FEATURES

1. Duplex Boring Model
2. Extension Table
3. X & Y-axis Extension
4. Back-boring Attachment
5. AFC Function
6. APC

1 PRIMARY MARKET OF HBM_6. SHIP BUILDING

HEAVY & LARGE WORKPIECE

I. APPLICATIONS

CONNECTING ROD



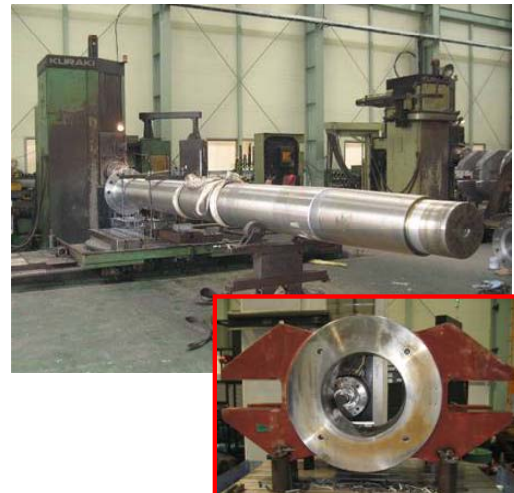
ENGINE CRANK PARTS



PISTON ROD



SHIP STEERING PARTS



II. MAJOR VOC

1. Heavy Load Performance
2. Wide Work Area
3. Multitasking for Various Work

III. BASE MODEL : Ø130 CLASS

IV. RECOMMENDED MACHINE FEATURES

1. Heavy Load Rotary Table
2. Table & Axis Extension
3. Additional 6th Axis
4. Plane Table Model

1 PRIMARY MARKET OF HBM_7. POWER GENERATION

HEAVY & LARGE WORKPIECE

I. APPLICATIONS

PLANT VALVE HOUSING



PUMP TANK



TURBINE BLADE



HIGH PRESSURE PUMP POWER FRAME



II. MAJOR VOC

1. Heavy Load Performance
2. Big Size Boring & Facing
3. Easy Chip Removal

III. BASE MODEL : Ø130 CLASS

IV. RECOMMENDED MACHINE FEATURES

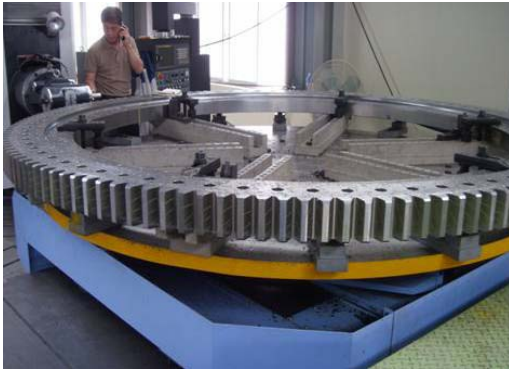
1. Heavy Load Rotary Table
2. Attachment (Face Plate, Angle Head, Cogsdill)
3. TSC
4. Semi S/G, Full S/G

1 PRIMARY MARKET OF HBM_8. WIND POWER

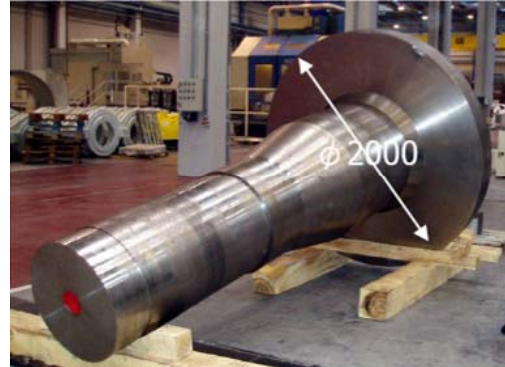
HEAVY & LARGE WORKPIECE

I. APPLICATIONS

RING GEAR



MAIN SHAFT



HUB



Main Frame



II. MAJOR VOC

1. Wide Work Area
2. Heavy Load Performance
3. Multitasking for Various Work

III. BASE MODEL : Ø130 CLASS

IV. RECOMMENDED MACHINE FEATURES

1. Y-axis Extension
2. Heavy Load Rotary Table
3. Boring Attachment

1 PRIMARY MARKET OF HBM_9. OIL-GAS INDUSTRY

HEAVY & LARGE WORKPIECE

I. APPLICATIONS

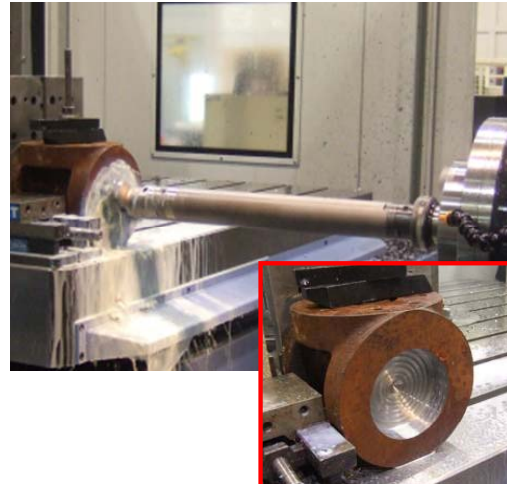
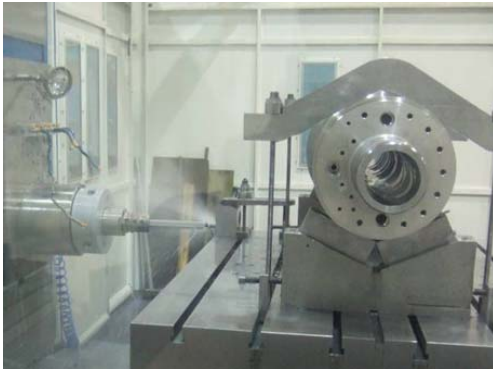
■ OIL PROSPECTING PART



■ OIL TERMINATION HEAD



■ OIL INJECTION



II. MAJOR VOC

1. Heavy Load Performance
2. Cutting Trust Force
3. Easy Chip Removal

III. BASE MODEL : Ø130 CLASS

IV. RECOMMENDED MACHINE FEATURES

1. Heavy Load Rotary Table
2. Z-axis Power-up
3. High Pressure TSC
4. Semi S/G
5. Each 45° Indexing by Pin

END OF DOCUMENT